

Pharmaceutical Development and Physico-chemical Evaluation of Herbal Body Scrub prepared by *Charakokta Shirishadi Churna*

Ashvini Deshmukh¹, Anita Wanjari¹

¹Department of Rasashastra & Bhaishajya Kalpan, Mahatma Gandhi Ayurved Medical College, Hospital and Research center salod, DMIMS Sawangi, Wardha

Corresponding Author:

Ashvini Deshmukh

Email : drashdesh2011@gmail.com



Abstract :

Background- In Ayurveda the concept of beauty has an age-old origin. The increase demand for the natural products has created new avenues in cosmetics market. *Maharshi Charaka* has mentioned Many hygienic performances like *Abhyanga*, *Snana*, *Lepa* etc under the concept of Beauty. Selected Formulation *Shirishadi Churna* is Mentioned in *Charak samhita* which works as *twagdoshar* and *swedahar* But application of *Churna* on body on a daily basis is inconvenient, time consuming and quite difficult. Hence present study was conducted to develop cream based Herbal body scrub.

Objective- Pharmaceutical Development and physico-chemical Evaluation of Herbal body scrub by using classical reference of *Shirishadi Churna*.

Preparation Method- Pharmaceutical development of *Shirishadi Churna* body scrub from *Shirish* (*Albizia Lebbeck*), *Usheer* (*Vetiveria Zizanioides*), *Nagkeshar* (*Mesua ferrea*) & *Lodhra* (*Symplocos racemosa*) siddha coconut oil, E-wax, Stearic Acid, Sodium Cocoyl isethionate, Cocamidopropyl Betaine, Glycerine, preservative.

Results- Different evaluations tests are carried out for the prepared herbal body scrub formulation such as appearance, pH, spreadability, washability, skin irritation test, homogeneity etc. Prepared formulation passes all the given evaluation tests.

Conclusion- The current work was done to prepare an herbal body scrub by using classical reference of *Shirishadi Churna* and used appropriate base to form a cream. The prepared body scrub was evaluated using various parameters and was found to be satisfied. *Shirishadi Churna* is classical formulation which is *twakdoshar*, *swedahar* when it is used as scrub hence it is an attempt to develop cream based body scrub which is a safe, potent, effective & easy to use on daily basis with the longer shelf life & cost effective formulation.

Key Words : Exfoliant, body scrub, cosmetics.

Introduction :

The concept of beauty and cosmetics is as old as human civilization. In Ayurveda the concept of beauty has an age-old origin. The increase demand for the natural products has created new avenues in cosmetics market. *Maharshi Charaka* has grouped different herbs according to their effects such as *Varnya*, *Keshya*, *Vayasthapana* etc. which add to the Beauty of an individual. Many hygienic performances like *Abhyanga*, *Snana*, *Lepa* etc. are stated to have beautification of the physique. Selected Formulation *Shirishadi Churna* is Mentioned in *Charak samhita* as *twagdoshar* and *swedar*⁽¹⁾ when it is rubbed (*Pragharsh*) on skin But application of *Churna* on body on a daily basis is inconvenient and quite difficult. Hence present study was conducted to develop Herbal body scrub prepared by *Shirishadi Churna*. Scrubbing is the process of eliminating dead skin cells from the surface of your skin using the granulated substance and exfoliator tool.

For the preparation of herbal body scrub following steps are to be followed- To prepare *shirishadi Oil* as per classical reference, To prepare *shirishadi Phant*, To prepare herbal body scrub and analyse⁽²⁾.

Materials and Method-

Shirishadi lepa is classical formulation which is mentioned in *charak samhita* su.st.3/29. *Shirishadi churna* contains *Shirish*, *Usheer*, *Nagkeshar* & *Lodhra*. For Pharmaceutical Development of Herbal body scrub 2 phases are required –oil phase and water phase, so in this study instead of plain coconut oil *shirishadi churna siddha* oil was used for oil phase, Coconut oil is used for oil preparation and *shirishadi churna phant* (hot infusion) was used instead of distilled water for water phase. Small pieces of *Usheer* (exfoliant) were used for scrubbing effect and *khas(usheer)* essential oil is used for better efficacy of product.

**Table no1-Ingredients for preparation of shirishadi oil (For oil Phase)
For Kwath preparation-**

Name of Drug	Latine Name	Part Used	Quantity
<i>Shirish</i> ^(3,4)	Albizia Lebbeck	Bark	40 gms
<i>Usheer</i> ^(3,4)	Vetiveria Zizanioides	Root	40 gms
<i>Nagkeshar</i> ^(3,4)	Mesua ferrea	Stamens	40 gms
<i>Lodhra</i> ^(3,4)	Symplocos racemosa	Bark	40 gms
<i>Coconut oil</i> ^(3,4)	Cocos nucifera	Oil	80 ml
Water	-	-	2560ml

For Kalka Preparation- Each drug *Shirish*, *Usheer*, *Nagkeshar* & *Lodhra churna* was taken in 5gms quantity.

Table no 2- Ingredients for preparation of shirishadi Phant (For water Phase)

Ingredient	Quantity
<i>Shirishadi Bharad</i> (<i>Shirish</i> , <i>Usheer</i> , <i>Nagkeshar</i> & <i>Lodhra</i>) gms (2gms each drug)	8
Distilled water	48 ml

Table No 3- Ingredients for preparation of shirishadi Herbal Body Scrub

Ingredient	Quantity	Category
For Oil phase		
Shirishadi oil	14 gm	<i>twakdoshhar,swedahar</i>
E-Wax	10 gm	Emulsifier
Stearic Acid	6 gm	Emollient
For Water phase		
Shirishadi phant	20gm	<i>twakdoshhar,swedahar</i> Solvent
Sodium Cocoyl Isethionate (SCI)	36 gm	Surfactant
Cocamidopropyl Betaine (CAPB)	18 gm	Surfactant
Glycerine	6gm	Emollient
Cool down Phase		
Phenoxyethenol	2 gm	Presevative
Essential oil (khas)	2gm	Perfume
Small pieces of Usheer (exfoliant)	10gm	Scrubbing Agent

A. Preparation of *shirishadi oil* (Table no1)(Figur 1)

Step 1: *Kwatha* was prepared by using 160 gms (40 gms each) of *Shirish*, *Usheer*, *Nagkeshar* & *Lodhra Bharad* by adding 16 times(2560 ml) of water in it and after that it was reduced upto 8th part (320ml) and filtered through clean cotton cloth. *Kalka* was prepared by using 20 gms (5 gms each) of *Shirish*, *Usheer*, *Nagkeshar* & *Lodhra churna*

Step 2: 80 ml *Coconut oil* was taken in a clean stainless-steel vessel. This vessel was placed over mild flame. Then prepared *kalka* was added to it.

Step 3: Then prescribed proportion of *Kwatha* was added to above mixture. Meanwhile the boiling was continued with frequent stirring until all *Sneha siddhi Lakshanas* were

attained. Later it was filtered through a clean cotton cloth and stored in wide mouthed glass bottle. The oil retained reddish colour (*Aruna varna*) after the process.

B. Preparation of *Shirishadi Phant* (Table no 2)(Figur 2)

Step 1: *Shirishadi Phant* was prepared by using 8 gm of *Shirishadi Bharad*(2gm each *dravya*) and 4 parts of boiling Distilled water (32 ml). Later the mixture was macerated well till it was warm and filtered through a clean cotton cloth.

C. Preparation of *shirishadi Herbal Body Scrub* (Table no 3)(Figur 3)⁽⁵⁾

Step 1 (Water phase) -Mentioned quantity of Sodium Cocoyl Isethionate (SCI) was taken in a clean stainless steel vessel and *Shirishadi Phant* was added to it and kept it on Hot

plate on low heat Then after mentioned quantity of Cocamidopropyl Betaine, Glycerine was added into this mixture with constant stirring. After sufficient stirring the fire was lit off.

Step 2 (Oil Phase) -Mentioned quantity of *shirishadi oil* was taken in a clean stainless steel vessel and E – wax was added to it and kept it on Hot plate on low heat and waited until it was completely melt. Then after Stearic Acid was added into this mixture with constant stirring. After sufficient stirring the fire was lit off.

Step 3: -Gently melt the both phases over a low heat once both are molten,poured the oil phase into water phase and it was blended vigorously with the help of blender. The Mixture was thicken rapidly and had cream like consistency⁽⁶⁾.

Step 4-After the initial mix,allow the mixture to cool down then preservative(Phenoxyethenol), Essential oil, Small pieces of *Usheer* (exfoliant) was added one by one into this mixture and mix until it becomes homogeneous. After sufficient blending smooth shirishadi Herbal Body Scrub was obtained⁽⁷⁾.

Figur 1-Preparation of shirishadi oil



Figur 2 -Preparation of shirishadi Phant



Figur 3- Preparation of shirishadi Herbal Body Scrub



OBSERVATION AND RESULTS: -Evaluation parameter for herbal body scrub⁽¹⁰⁾ (Table No. 4)**Appearance:**

Colour: Off white colour of herbal body scrub was observed by visual examination. **Odour:** Odour found to be characteristics. **State:** Semisolid state of scrub observed by visually. **Consistency:** Consistency was found to be smooth with visual observation.

PH: PH of the prepared gel evaluated by using PH paper. Small amount of scrub applied on PH paper. PH was 5.

Spreadability: It is used to identify spreadability of the scrub on the skin. Small quantity of sample placed on a glass slide then another slide placed above them. Amount of weight

placed on slide, then it spread on slide and how much time it taken for spread is measured.

It calculated by using formula:- $S = m \times L/t$

S= spreadability M= weight placed on slide (1gm) L= length of glass slide (7.5cm) T= time taken in seconds (22 sec) Spreadability was found to be 0.34gm.cm/sec

Irritability: Small amount of scrub applied on skin and kept for few minutes and found to be non- irritable.

Washability: Small quantity of scrub applied on the skin and wash with water after few minutes found to be washable with water.

Grittiness: Exfoliants need to abrasive property so *Usheer* powdered and pass through sieve then this preparation has few gritty particles observed.

Table no 4-Result

Sr no	Parameter	Result
1	Colour	Off white colour
2	Odour	characteristic smell
3	Stat	semisolid
4	Feel on application	Greasy
5	pH Value	5
6	Consistency	Semisolid
7	Spreadability	Uniform
8	Irritability	Non irritant
9	Grittiness	Presence of gritty particles
10	Washability	Easily washable
11	Homogeneity -By visual, By touch	Smooth Consistent
12	Stability	Stable

Discussion :-

Results of physical appearance, pH, skin irritation test, spreadability, grittiness, washability, homogeneity, stability are given in above tables. Human skin is fairly acidic. The optimal pH of human skin ranges between 5 to 6. The formulated *shirishadi oil* and *shirishadi herbal body scrub* has pH of 5 which is acidic and suitable for human skin⁽⁸⁾. All the ingredients used for this formulation are *kashay tikta rasatmaka*, and having *katu Vipaka*, *laghu, ruksh* properties⁽³⁾. They all are *swed dorgandyanashak*, *twagdosshar* which are important factors for antiperspirant effect and providing clear skin.

Coconut oil is used for oil preparation. Coconut is *madhur in rasa*, *sheeta virya*, *Madhura vipaka*, and *guru and snigdha gunatmaka*⁽⁹⁾ Because it has antimicrobial properties as well as it helps to exfoliate outer layer of dead skin cells. Small pieces of usher is used for scrubbing purpose.

As per classical reference *shirishadi lep* act as *twakdosshar, swedahar* when it is rubbed (*Pragharsh*) on skin⁽¹⁾. Hence it is an attempt to develop cream based Herbal Body Scrub. *shirishadi herbal body scrub* was found to be homogeneous, smooth, and consistent with no aggregates or sediments with skin compatible and no irritation found on application.

Herbal drugs used for the preparation of *shirishadi oil*, exfoliant property of *usher* and soothing property of *coconut oil* all these ingredients make it suitable for the preparation of herbal body scrub⁽⁶⁾. Some of the ingredients are even proved as antiperspirant effect, clinically⁽⁹⁾.

Conclusion: -

In the present study, the herbal body scrub was formulated successfully. In comparison to other cosmetic products available in the market, natural and herbal cosmetics are easy, safe and effective to use. So, this classical formulation can be converted into new dosage form i.e. body scrub, for better

application as compared to churna, providing more stability, convenience and shelf life. However, an elaborate protocol for the pre-clinical and clinical trials is needed to be designed and implemented to check the activity on human volunteers or through in-vitro study. In vitro study can be tested against Staphylococcus, Corynebacterium, Propionibacterium bacteria's which metabolize sweat.

Conflict of Interest: Nil

Source of Support: Nil

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