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“COMPARATIVE ANALYTICAL STUDY OF TRIPHALASHODHITASHILAJATU AND GOMUTRA SHODHITA SHILAJATU”

**Dr. Vijay Kallappa Done¹, Dr.Satwashil Desai², Dr.Shital Anil Raskar³, Dr.Amrapali
Vijay Done⁴, Dr. Roshan Wankhade⁵**

¹Assistant Professor, Department Of Rasashastra & Bhaishajya Kalpana

²Professor, HOD, Department Of Rasashastra & Bhaishajya Kalpana

³Associate Professor, Department Of Rasashastra & Bhaishajya Kalpana

⁴Assistant Professor, Department Of Rasashastra & Bhaishajya Kalpana

⁵M.D. Department Of Rasashastra & Bhaishajya Kalpana

LRPAMCH PGI & RC, Islampur.

Corresponding Authors Email ID:

Email: vijaynitin27@gmail.com

ABSTRACT:

Shilajatu is the important *Ayurvedic* drug having several therapeutic properties. After *Shodhan* (proper purification) administration of *Shilajatu* gives miraculous benefits. *Triphala* a well-known *Ayurvedic* formulation has been taken for purifying *Shilajatu* owing to its *Tridoshashamaka* and *Lekhana* properties. It may act as synergistic to the properties of *Shilajeet*. *Gomutra* has been used since ages for holy rituals as well as for medicine purpose. *Gomutra* is considered to be a best remedy for obesity due to its *Kshariya* and *Lekhana* property. Hence *Gomutra* was taken as a *Shodhan* media to purify the *Shilajeet*.

Present study is comparative study & was carried out to observe the analytical difference between two different media of *Shilajatu Shodhan*.

Keywords: *Shilajatu, Shodhan, Triphala, Gomutra, Analytical study*

INTRODUCTION:

Apart from the mercury, the group which comes as the important one, is not only curing the ailments but also binding mercury in the *Maharasa* group. There are eight members of *Maharasa* which constitutes the group (RSS) and the one which is supposed to be used in using all the curable diseases is *Shilajeet*, which is the important member of this group. Though this drug is included in the *Maharasa* group, according to *Anandkanda*, but all the properties of *Rasa*, *Uparasa*, *Parada*, *Ratna*, *Lauha* etc. are found together in this single drug, which not only make the body solid like iron but also acts as a *Rasayana* which delay aging and even death (A.K.1/25). *Shilajeet* is an important herbomineral drug among the *Maharasa*.¹ Describing its importance *Charaka* has said, “there is hardly any curable disease which cannot be alleviated or cured with the aid of *Shilajeet*(Ch.Chi.1-3/65). Pharmacological proportion of *Shilajeet* has been elaborately explained by *Acharya Charaka* in *Chikitsasthana* 1 – 3 / 48. Further references of *Shilajeet* can be traced in *Sushruta Chikitsasthana* 13 /4-9, in *Astanga Sangraha* sutra *Sthana* 12/ 27 – 28 and in *Sharangadhara Madhyamakhanda* 11 / 94-95.^{2,3} In *Ayurvedic* texts a number of processes

have been mentioned for the purification of *Shilajeet*. From these, in present study, the *Shilajeet* have been purified by the following two processes – (1) Purification in *Gomutra* and (2) Purification in *Triphala Kwatha*. [Ref. RT].^{4,5}

AIM & OBJECTIVES:

1. To prepare *Triphala Shodhita Shilajeet* and *Gomutra Shodhita Shilajeet* in *Rasashastra & Bhaishajya Kalpana* Department
2. To analyze both the sample i.e. *Triphala Shodhita Shilajeet* and *Gomutra Shodhita Shilajeet*.

MATERIAL & METHODS:

Study is divided in two sections

- 1) Pharmaceutical Study.
- 2) Analytical Study.

1. Pharmaceutical Study :

Pharmaceutical study includes mainly preparation of crude drugs and pharmaceutical processing, process standardization in which drug ratio, *Drava* quantity, intensity of fire and duration etc.

Practical study comprised of :

- 1.1. Preparation of *TriphalaKwatha*.
- 1.2. *ShilajeetShodhana* by *TriphalaKwatha*.
- 1.3. *ShilajeetShodhana* by *Gomutra*.

• PREPARATION OF TRIPHALA KWATHA

REF.: General method of preparation of *Kwatha**Sharngadhara Samhita*

Materials Required:

Stainless steel vessels, Gas stove, cloth, measuring jar, thermometer, Spatula.

Ingredients:

TriphalaYavkuta Churna = 02 Kg. &
Water = 16 liter

Method of preparation:

- 2 Kg. of *Triphala Yavkuta Churna* was kept soaked in 16 liters of water for overnight.
- Next day it was boiled on mild heat without covering its mouth.
- Water was slowly evaporated and was reduced till the quantity became ¼ th.
- It was filtered with clean cloth and filtered solution was collected as *Triphala Kwatha*.

Observation:

- *Triphala Yavkuta Churna* became soft when kept soaked for overnight
- It requires 98 ° C temperatures to boil the *Triphala* containing water.
- It required 6 hours of heating to reduce the solution to ¼ th quantity
- The colour of prepared *Kwatha* was dark brown.

Table No.01

S.N.	Ph	Colour	Taste	Odour
1	3	Brown	Kashaya	Not significant

Results:

- Initial quantity of water taken = 16 liter.

- Final quantity of *Kwatha* obtained = 4 liter.
- Weight of *Triphala Yavkut* taken= 2 Kg
- Weight of Residue = 1.675 gm.

PRACTICAL No. 2

Name of Practical: *Shilajeeta Shodhana* by *Triphala Kwatha***Ref:** R. T.

Material required: Stainless steel vessels, gas stove, hot plate, knife, tray, weighing balance, measuring jar, cloth, thermometer, spatula.

Ingredients:

1. *Ashudha Shilajeet* = 2 Kg.
2. *Triphala Kwatha* = 4 liter

Procedure:

- *Ashuddha Shilajeet* was powdered and added to hot *Triphala Kwatha* and was stirred for 20-25 minutes with a spatula.
- Then *Triphala Kwatha* containing *Ashuddha Shilajeet* was heated and was continuously stirred till it completely dissolved in *Triphala Kwatha*. As this became thick paste 4 liters of hot water was further added.
- This was kept undisturbed for 24 hours. Next day the supernatant liquid was decanted and stored, whereas residual material was collected separately.

- In residual materials again hot water was added and mixed well and was kept undisturbed for another 24 hours.
- Next day the supernatant liquid was again decanted and residual matter was separated.
- This process was continued for 7 times and soluble matter from the residue was collected and stored.
- All the collected supernatant fluid was kept separately and was observed for further sedimentation.
- As all samples had sedimentation these were decanted till the soluble matter become clear.
- Then all the samples were mixed and was heated on mild fire at 70°C and watery portion was evaporated. The time taken for evaporation was noted down.
- Finally semi solid form of *Shuddha Shilajeet* was collected & kept in a air tight container.

Observation:

- When 2 Kg. Of *Ashuddha Shilajeet* was mixed with *Triphala Kwatha* it became thick paste. So it was felt to add hot water to *Triphala Kwatha* to dissolve *Shilajeet* completely.
- On adding hot water there was sedimentation of solid mass and

supernatant fluid was decanted easily.

- The colour of supernatant fluid was dark brown and was thick in appearance.
- On further adding hot water to residual matter, the decanted fluid became light brown in colour and was dilute in nature.
- The initial residue obtained from the *Triphala Kwatha* was hard stone and gravel.
- Final residues obtained after repeated decantation was like mud & powdered form and was brown in colour.

Table showing Temp. & Duration of water evaporation.

Table No.02

S.N.	Temp. range	Time
Date		duration of Heat
1.	68 °C	5 hours
20-06-2019		
2.	69 °C	4 hours
21-06-2019		
3.	69 °C	3.45 hours
22-06-2019		
4.	68 °C	3 hours
24-06-2019		
5.	67 °C	3 hours

25-06-2019		
6.	70 °C	2 hours
26-06-2019		
6 Days	20.45 hours	

	et			
1.	2 Kg.	750gm	1250gm	37.50 %

Precaution:

1. Utensils & vessels used should be neat and clean to avoid adulteration.
2. Raw Shilajeet should be used in powdered form.
3. *Triphala Kwatha* should be prepared from *Triphala Yavkuta*.
4. *Shilajeet* should be filtered to remove large impurities after soaking it in *Triphala Kwatha*.
5. Temp. should be maintained around 70 °C.
6. Continuous stirring should be done to avoid sticking.
7. Watery portion from *Shilajeet* should be evaporated by using waterbath.

Result:

Initial weight of the raw *Shilajeet* = 2 Kg.
Final weight of the Shuddha *Shilajeet* obtained = 750gm. Loss in weight = 1250gm.% yield = 37.50% Weight of residue obtained after drying = 2070gm.Total time taken for evaporation = 20.45 hours

Table No.03

S. N.	Initial wt. of raw Shilaje	Final wt. of Shuddha Shilajeet	Loss in Weight	Final yield in %

PRACTICAL No. 3

Name of Practical: Shilajeet Shodhana by Gomutra....Ref. : R. T. 4,5

Material required : Wide mouth steel vessels, gas stove, hot plate, knife, tray, weighing machine, instrument for pounding, measuring jar, clean cloth, thermometer, spatula.

Ingredients:

1. Ashuddha Shilajeet = 2 Kg.
2. Gomutra = 4 liters.

Procedure:

- 2 Kg. Of *Ashuddha Shilajeet* was powdered and mixed to 4 liters of *Gomutra* and kept undisturbed for 24 hours.
- Next day supernatant *Gomutra* was decanted and filtered. The sedimented residual matter was again mixed with *Gomutra* & kept undisturbed for 24 hours.
- The obtained clear *Gomutra* Solution was again kept undisturbed and allowed for sedimentation, the supernatant fluid was stored in another vessel.
- All the decanted supernatant *Gomutra* was mixed together & kept for

sedimentation. The sedimented residual matter was removed and clear *Gomutra* solution was collected.

- This process of sedimentation and removal of residual matter was continued till whole of the *Gomutra* became clear of all the impurities.
- The clear solution of *Gomutra* was then heated on mild heat of 70°C temp. till all of its watery portion evaporated.
- Finally semi-solid Ghana form of matter was collected as pure *Shilajeet*.

Observation:

- PH of *Gomutra* was 8.
- When *Ashuddha Shilajeet* powder was mixed with *Gomutra*, a layer of foam formed over the *Gomutra*.
- The colour of the *Gomutra* changed to dark brown.
- The supernatant *Gomutra* solution obtained after decantation was thick in nature & dark brown in colour.
- After adding further *Gomutra* to residual matter of *Shilajeet*, the solution obtained was dilute and light in colour as compared to previous solution.
- The residue matters obtained after 1st decantation were hard stones and gravels. But in latter processes, mud like residue was collected.

- The obtained pure *Shilajeet* was bright brown in colour and had pungent smell of *Gomutra*.

Observation table:

Table 04 showing Temp. & Duration of water evaporation:

Table No.04

S.N	Date	Temperature range	Time Duration of Heat
1.	01/07/2019	70 ° C	4 Hours
2.	02/07/2019	69 ° C	3 Hours
3.	03/07/2019	70 ° C	3 Hours
4.	04/07/2019	68 ° C	3 Hours
5.	05/07/2019	70 ° C	3 Hours
6.	07/07/2019	69 ° C	2 Hours
7.	08/07/2019	70 ° C	1 Hours
	7 Days	-	19 Hours

Precautions:

1. Utensils & vessels should be used neat and clean to avoid adulteration.
2. *Shilajeet* should be used in powder form.

3. Fresh *Gomutra* should be used.
4. *Shilajeet* should be filtered to remove large impurities after soaking in *Gomutra*.
5. Temperature should be maintained around 70°C.
6. Continuous stirring should be done to avoid sticking.
7. Water bath should be used to evaporate residue water from *Shilajeet*.

Result :

Initial weight of Raw *Shilajeet* = 2kg
 Final wt. of *Shuddha Shilajeet* obtained = 450 gm
 Loss in weight = 1550 gm % yield = 22.5 %
 Wt. of Residue obtained after drying = 1430 gm
 Average temp. required for heating *Gomutra* = 70° C
 Total time taken for evaporation = 19 hours

Table No.05

S. N.	Initial wt. of raw <i>Shilajeet</i> t	Final wt. of <i>Shudha Shilajeet</i>	Loss in Wt. gm	Final Yield in %
1.	2 kg	450 gm	1550 gm	22.5 %

RESULTS AND DISCUSSION:

As mentioned in the materials and methods section, both the samples under study were analyzed chemically by employing various parameters and the results of the study is being presented in this section.

- The data of the weight variation test of the samples has been tabulated in Table – 6.
- The comparative analytical data of the samples has been presented in Table -

7.Table 6

Data of weight variation & Disintegration Time of *Shilajeet* capsules

S.N. Parameter / Samples	Value Sample <i>Gomutra Shodhita Shilajeet</i>	Value Sample <i>Triphala Shodhita Shilajeet</i>
1.Wt. of 20 tablets	12.22 g	11.39 g
2.Average weight	0.599 g	0.569 g
3.Highest weight	0.640 g	0.617 g
4.Lowest weight	0.524 g	0.506 g
5.Disintegration time	45 min.	40 min.

As could be seen from the table, both the samples passes weight variation test.

Table 7
Comparative analytical data of *Shilajeet* samples.

S. N.	Parameter / Sample	Value

		Sample Gomutra shodhita Shilajeet	Sample Triphalasho dhitaShilaje et
1.	Ash value, % w/w	10.25	14.1
2.	Acid insoluble ash , %w/w	0.20	Traces
3.	Water soluble extractiv e , % w/w	77	94.4
4.	pH	5	5

The data presented in Table 7 reveals that ash value is comparatively high in *Triphala Shodhita Shilajeet* sample (14.1%) as compared to *Gomutra shodhita Shilajeet* sample (10.25%). There is considerable difference in water soluble extractive values. It is 94.4% in *Triphala shodhita Shilajeet* samples as compared to 77% in *Gomutra shodhita Shilajeet* sample.

CONCLUSIONS:

Ancient scholars like *Charaka*, *Sushruta* and *Vagbhata* have considered *Shilajeet* as an exudate of mountains of high altitudes and have classified it according to its mineral contents like – *Svarnadrija*, *Rajatadrija*, *Tamradrija* and *Lohadrija* etc. A recent research on *Shilajeet* has revealed that it is a vegetative product rather than a mineral product. *Triphala* a well-known Ayurvedic formulation has been taken for purifying *Shilajeet* owing to its *Tridoshashamaka* and *Lekhana* properties. It may act as synergistic to the properties of *Shilajeet*. *Gomutra* has been used since ages for holy rituals as well as for medicine purpose. *Gomutra* is considered to be a best remedy for obesity due to its *Kshariya* and *Lekhana* property. Hence *Gomutra* was taken as a *Shodhana* media to purify the *Shilajeet*.

For the *Shodhana* of *Shilajeet* with *Triphala* media, it requires at least six times *Triphala kwatha*. Similarly with *Gomutra* media, it requires six times *Gomutra* to purify *Shilajeet* up to the mark. *Shilajeet shodhana* with *Gomutra* comparatively takes less time than *Triphala Kwatha*. *Shilajeet* Shodhana with *Gomutra* media takes 18 – 19 hours, whereas with *Triphala* media takes minimum 20 hours for complete purification of *Shilajeet*. It requires around 70°C temperature with both *Triphala Kwatha*

and *Gomutra* media to extract *Shuddha Shilajeet* from raw *Shilajeet*. Total yield of purified *Shilajeet* by *Triphala* media was 37%, where as with *Gomutra* media it was only 22% Analytical study shows that *Triphala shodhita Shilajeet* takes lesser time for the disintegration in comparison with the *Gomutra shodhita Shilajeet*.

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