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Pharmaceutical Conversion Of *Ashtakatvara Taila* Into Liniment: A Comparative Study

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Abstract

Ashtakatvara Taila is a classical Ayurvedic medicated oil indicated mainly in *Urustambha* and *Vatika* disorders, described in Charaka Samhita and Bhavaprakasha with variations in pharmaceutical proportions. The present study aimed to comparatively evaluate the pharmaceutical preparation of *Ashtakatvara Taila* as per two classical references and to develop its modified dosage form as a liniment. Two batches of *Taila* were prepared using *Sarshapa Taila* as the base, *Shunti* and *Pippalimoola* as *Kalka Dravya,* and *Dadhi* and *Katvara* as *Drava Dravya*, following standard *Taila Paka* procedures Charaka Samhita (Batch A) and Bhavaprakasha (Batch B). The prepared *Taila* was further modified into a liniment by incorporating menthol, camphor, and eucalyptus oil. Detailed observations on temperature, duration, *Sneha Siddhi Lakshanas*, yield, and loss were recorded. Batch A showed a higher percentage loss of *Taila* compared to Batch B, whereas both liniment preparations demonstrated improved spreadability, reduced viscosity, cooling sensation, and better skin absorption. The study highlights the influence of classical proportions on pharmaceutical outcomes and supports the utility of liniment as a patient-friendly external dosage form of *Ashtakatvara Taila.*

Key Words: *Ashtakatvara Taila,* Liniment

Introduction

Ayurveda describes a wide range of dosage forms of medications for different therapeutic purposes. *Taila Kalpana* is one of the most important and prime dosage form that has been emphasized in the treatment of various conditions. *Taila Kalpana* can be administered internally as well as externally. *Ashtakatvara Taila* is one among *Taila Kalpana,* that is explained in various classical texts. It is mentioned in Charaka Samhita, Chikitsa Sthana, Urustambha Chikitsa Adhyaya[1] and Bhavaprakasha, Urustamabha Adhikara[2] with different proportions. In the preparation of this *Taila*, *Katvara* (*Drava Dravya*) is taken in eight times the quantity of

Kalka, hence it is known as *Ashtakatvara Taila*. *Ashtakatvara.* It has properties such as *Vedanasthapana, Vatashamana, Shothahara, Vatanulomana* and *Srothoshodhana.*

Liniments are alcoholic or oil based solutions containing therapeutic agents possessing irritant, counter–irritant, analgesic and emollient properties. Liniment intended for external application, penetrates the skin more readily and treats muscle sprain and pain[3]. For the purpose of better application and convenient to patient this *Taila* was modified into Liniment in this study.

Aims and Objectives

- To prepare *Ashtakatvara Taila* by two different classical methods
- To prepare the Liniment form of *Ashtakatvara Taila* of both the references.
- To compare the pharmaceutical parameters of *Ashtakatvara Talia* and its Liniment

Materials and Methods

Procurement of raw drugs

Materials required for the preparation of *Ashtakatvara Taila* and its Liniment were collected from Alva's Pharmacy Mijar.

Authentication of raw drugs

The raw drugs were identified by the experts of Alva's Atma Research Centre, Moodubidre, Karnataka.

Place of manufacturing

Ashtakatvara Taila and its Liniment was prepared in the laboratory of postgraduation department of Rasashastra and Bhaishajya Kalpana, Alva's Ayurveda Medical College, Moodubidire.

Two batches of *Taila* with 2 references prepared and modified into Liniment

Batch A – Sample 1- Charaka Samhita reference *Ashtakatvara Taila*

Batch B – Sample 1 Bhavaprakasha Samhita reference *Ashtakatvara Taila*

Batch A – Sample 2 Charaka Samhita reference *Ashtakatvara Taila* Liniment

Batch B – Sample 2 Bhavaprakasha Samhita reference *Ashtakatvara Taila* Liniment

Equipment – Measuring jar, weighing machine, utensils, fire source, kora cloth, bottle, spatula.

Ingredients: Ingredients and their quantity is mentioned in table no.1

Table No 1: Ingredients of *Ashtakatvara Taila* Batch A - Sample 1 and Batch B Sample 1

Practical 1 : Batch A – Sample 1 *Ashtakatvara Taila*

Method of preparation:

There are mainly 3 steps in method of preparation:

1. *Purva Karma*
2. *Pradhana Karma*
3. *Pashchat Karma*

1. *Poorva Karma*

Preparation of *Dadhi* and *Katvara* : One litre of milk was boiled, cooled, and then 15 ml of curd was added before being left to ferment for three days to prepare *Katvara*. In a separate batch, another litre of milk was boiled, cooled, mixed with 15 ml of *Dadhi*, and kept for one day.

S. NO	DRUGS	BOTANICAL NAME	PART USED	QUANTITY MENTIONED		QUANTITY TAKEN	
				Batch A	Batch B	Batch A	Batch B
1	*Pippalimoola*[4]	*Piper longum* Linn.	Root	1 Part	2 Parts	31.25g	62.5g
2	*Shunti*[5]	*Zingiber officinale* Rosacoe.	Rhizome	1 Part	2 Parts	31.25g	62.5g
3	*Katvara*[6] (Sour Curd)	-	As such	16 Parts	16 Parts	500ml	500ml
4	*Dadhi*[7]	-	As such	16 Parts	16 Parts	500ml	500ml
5	*Sarshapa Taila*[8]	*Brassica juncea* Linn.	Seed	16 Parts	16 Parts	500ml	500ml

Preparation of *Kalka* : The *Pippalimoola* and *Shunti* were pounded in *Khalva Yantra* and were made into a *Kalka.*

2. *Pradhana Karma*

Taila Paka:

In the present study, 500 ml of *Sarshapa Taila* was accurately measured and transferred into a wide-mouthed stainless steel vessel. The oil was subjected to controlled heating over a mild flame to ensure uniform thermal exposure without inducing degradation of its constituents. Subsequently, 62.5 g of the prepared *Kalka* was incorporated into the warmed oil, followed by the addition of 500 ml of *Dadhi* and *Katvara* in measured quantities. The mixture was continuously stirred to facilitate homogeneous dispersion of the *Kalka* and aqueous components within the lipid phase, thereby promoting effective extraction and integration of the active principles. The heating and stirring process was sustained until the attainment of *Sneha Siddhi Lakshanas,* the classical indicators of completion in Ayurvedic pharmaceutics, which confirm the proper binding of the drug with the lipid base and the readiness of the medicated oil for therapeutic application.

3. ***Pashchat Karma***

After the confirmation of *Sneha Siddhi Lakshanas***,** the heating process was terminated and the prepared Taila was immediately filtered through a clean cloth to remove any coarse particles. The filtrate was allowed to cool to room temperature, following which the final yield was carefully measured and stored in a clean, airtight container to ensure stability and preservation of its therapeutic properties.

Practical 2 : Batch B – Sample 1 *Ashtakatvara Taila*

1. ***Poorva Karma* –** Same procedure adopted as mentioned in Batch A procedure
2. ***Pradhana Karma* -** Same procedure adopted as mentioned in Batch A procedure the only quantity of *Kalka* was added 125g
3. ***Pashchat Karma* -** Same procedure adopted as mentioned in Batch A procedure

Practical 3 and 4: Preparation of Liniment for both the batches[9]

Table No 2 : **Showing Ingredients of *Ashtakatvara Taila* Liniment Batch A and Batch B – Sample 2**

S. No	Ingredients	Quantity Mentioned		Quantity Taken	
		Batch A	Batch B	Batch A	Batch B
1	*Ashtakatvara Taila*	100ml	100ml	200ml	200ml
2	Menthol crystals[10]	0.7%	0.7%	1.4g	1.4g
3	Camphor crystals[11]	5%	5%	10g	10g
4	Eucalyptus oil[12]	5%	5%	10ml	10ml

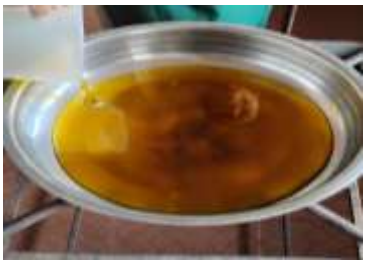
Procedure: For both the batches of liniment preparation same procedure adopted

The 200ml of *Ashtakatvara Taila* Sample 1 – Batch A and Batch B was measured, transferred into a stainless steel vessel. Finely powdered menthol and camphor were added to mildly heated oil, then mixed well. After mixing of these powders later 10ml of Eucalyptus oil was added. This was stirred well until it turns into homogenous mixture. The prepared liniment was stored in an air tight container.

Preparation of *Ashtakatvara Taila* Batch A – Sample 1

1.1 Ingredients

1.2 Prepared *Kalka*



1.3 Addition Of *Taila*

1.4 Addition Of *Kalka*

1.5 Addition Of *Drava Dravya*

1.6 Heating of *Taila*

1.7 *Sneha Siddhi Lakshana*

1.8 Filtration of *Taila*

1.9 Final Product

Preparation of *Ashtakatvara Taila* Batch B – Sample 1

2.1 Ingredients

2.2 Prepared *Kalka*

2.3Addition of *Taila*

2.4 Addition of *Kalka*

2.5 Addition of *Drava Dravya*

2.6 Heating of *Taila*

2.7 *Sneha Siddhi Lakshana*

2.8 Filtration of *Taila*

2.9 Final Product

Preparation of *Ashtakatvara Taila* Liniment Batch A – Sample 2

3.1 Ingredients

3.2 Pouring of *Taila*

3.3 Addition of fine powders

3.4 Addition of Eucalyptus Oil

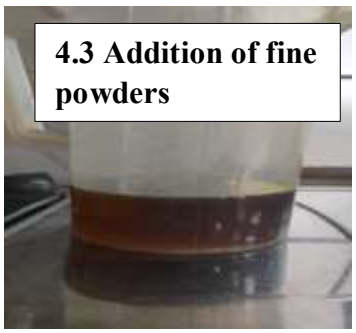
3.5 Mixing homogeneously

3.6 Final Product

Preparation of *Ashtakatvara Taila* Liniment Batch A – Sample 2

4.1 Ingredients

4.2 Pouring of *Taila*



4.3 Addition of fine powders

4.4 Addition of Eucalyptus Oil

4.5 Mixing homogeneously

4.6 Final Product

Observations

Day 1:

In both batches of *Ashtakatvara Taila*, the preparation process exhibited similar physical characteristics during heating. Initially, the *Sarshapa Taila* was gently warmed until it attained a light golden-yellow, upon the addition of the *Kalka Dravya*, mild frothing was observed, subsequently, the *Dadhi* and *Katavara* added, which produced a noticeable change in the mixture color to a deeper yellow shade. Then subjected to heating over *Mandagni*, initiating a gradual process characterized by evaporation and continuous bubbling. The *Mandagni* was maintained for approximately 30 minutes in both Batch A and Batch B, ensuring proper formation of *Taila Paka* with desirable consistency, color, and aroma.

Day 2:

During the preparation of *Ashtakatvara Taila* Batch A, small bubbles and frothing began to appear within approximately three minutes of initiating heating, indicating the interaction between the *Kalka* and *Sneha Dravya*. By around 4:00 p.m., clear signs of evaporation and yellow coloration of the oil were observed, procedure continued for about 20 minutes.

In Batch B, similar physicochemical transformations were noted; however, the process was completed in a relatively shorter duration of approximately 15 minutes.

Day 3:

In *Ashtakatvara Taila* Batch A, boiling accompanied by bubbling was first observed within five minutes of heating, the oil had transitioned to a golden-yellow color, indicating proper *Taila Paka*. The heating process, with continuous stirring to ensure uniform consistency and prevent adhesion of the *Kalka*, was maintained for a further 15 minutes.

In *Ashtakatvara Taila* Batch B, the onset of boiling occurred slightly later, despite this difference in timing, the sequence of changes closely mirrored that of Batch A, with the oil a golden-yellow during heating. Stirring was consistently maintained for 15 minutes to ensure homogeneity and optimal quality.

Day 4:

In both batches of *Ashtakatvara Taila*, boiling was prominently observed during the heating phase, accompanied by the *Kalka* adhering to the sides and bottom of the vessel—a typical indication of progressing *Taila Paka*. In Batch A, *Vartivat* was performed to prevent the *Kalka* from burning and to promote even heating. Despite this, residual moisture was still present, necessitating continued heating for an additional 20 minutes to achieve the desired consistency and completion of the process.

In Batch B, comparable changes were observed, including the sticking of *Kalka* and bubble formation, the process required a shorter duration of approximately 15 minutes.

Day 5:

In *Ashtakatvara Taila* Batch A, the separation of *Taila* from the *Kalka* was observed marking the onset of *Ama Paka Lakshana*, characterized by the emission of dense fumes. This was followed by *Mridu Paka*, indicated by a distinct crackling sound, signifying the gradual reduction of moisture content. The process then transitioned into *Madhyama Paka*, during which the *Kalka* became semi-solid and exhibited *Vartivat Kalka*. Heating was stoped with the total preparation time lasting around 40 minutes.

In *Ashtakatvara Taila* Batch B, the overall sequence of changes was similar but occurred over a longer duration. *Ama Paka* was observed at approximately 10:25 a.m., followed by *Mridu Paka* at 10:38 a.m., and *Madhyama Paka* at 10:50 a.m., with final confirmation of completion by 10:53 a.m. Heating was stopped at 10:55 a.m., marking a total duration of about 55 minutes.

Observations of *Ashtakatavara Taila* Liniment

- ❑ Viscosity of *Taila* got reduced and Batch A liniment was lighter than Batch B Liniment
- ❑ When it was applied on skin it showed cooling effect and better absorption

Results

Table No 3: Showing quantity of *Ashtakatvara Taila* Sample 1 - Batch A and Batch B

Table No 4: Showing quantity of *Ashtakatvara Taila* Liniment Sample 2 - Batch A and

Batch B

Parameters	Batch B	Batch A
Quantity taken	200ml	200ml
Quantity obtained	220ml	220ml
Gain	20ml	20ml
Gain in%	10 %	10 %

Parameters	Batch B	Batch A
Quantity of *Kalka* Taken	125g	62.5g
Quantity of *Kalka* Obtained	387g	289g
Quantity of *Taila* Taken	500ml	500ml
Quantity of *Taila* Obtained	450ml	410ml
Loss of *Taila* in ml	50ml	90ml
Loss of *Taila* in %	10%	18%

Discussion

Ashtakatvara Taila is a classical Ayurvedic formulation referenced in both the *Charaka Samhita* and *Bhavaprakasha*, each prescribing slightly different proportions for its preparation.

According to the classical proportions, *Charaka Samhita* recommends a ratio of 1:8:16 for *Kalka: Sneha: Drava*, whereas *Bhavaprakasha* suggests a modified ratio of 1:4:8. Following these textual variations, two experimental batches of *Ashtakatvara Taila* were formulated. Both batches utilized 500 ml of *Sarshapa Taila* as the base oil and 500 ml each of *Dadhi* and *Katavara* as the liquid components, maintaining consistency in *Drava Dravya*. The variation was introduced in the *Kalka Dravya* quantity, where Batch A contained 62.5 g and Batch B contained 125 g of *Shunti* and *Pippalimoola*. During preparation the enhancement of aroma occurred earlier compared to Batch A, suggesting a more efficient integration of herbal constituents, possibly due to the higher proportion of *Kalka Dravya*. The quicker attainment of proper *Taila Paka* characteristics in Batch B may be attributed to the higher proportion of *Kalka Dravya*, which facilitated faster evaporation of moisture and earlier aroma development. The extended process in Batch B may be attributed to the higher *Kalka Dravya* content, requiring additional time for thorough heating and complete attainment of *Madhyama Paka Lakshana*. Both batches demonstrated proper *Taila*

Paka characteristics as described in classical Ayurvedic formulations, ensuring optimal quality and therapeutic potency of the final product.

Ashtakatvara Taila Liniment preparation time taken was 15 minutes. It was mildly heated to a temperature of 44°C for Sample 2 – Batch A and 43°C for Sample 2 – Batch B. Camphor and menthol crystals were then added, and after slight cooling, eucalyptus oil was added at 38°C for Sample 2 – Batch A and 40°C for Sample 2 – Batch B. When the *Taila* of both batches was modified into Liniment, the viscosity of the *Taila* decreased, suggesting that it penetrates more easily and is readily absorbable.

Conclusion

Ashtakatvara Taila Batch A yielded 410 ml with an 18% loss, while Batch B yielded 450 ml with a 10% loss. Both the batches of *Ashtakatvara Taila* Liniment yielded 220 ml, showing a 10% gain.

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