



PHARMACEUTICAL STUDY OF OINTMENT CONVERSION OF ARKA TAILA

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ABSTRACT

Eczematous diseases are very common with an estimated prevalence more than 10% in the general population. 15-25% of all dermatological patients suffer from eczema. Scenario of eczema strikes close resemblance with the signs and symptoms of *Vicharchika*. *Arka taila* is effectively used as a topical application in *Vicharchika*. So the current study is aimed at developing the SMP and standard of ointment conversion of *Arka Taila*, as it offers a more convenient and widely acceptable alternative for oil. Initially *Arka Taila* was prepared as per the reference of *Sharangadhar samhita*. To prepare the paste and juice in large scale; wet grinder, centrifuge machine were used respectively. In lukewarm *Arka taila*, ointment bases were added & the mixture was stirred till the formation of ointment. Total three batches were prepared and analyzed physico-chemically. In organoleptic analysis, chemical analysis were carried out. In HPTLC analysis, coinciding max Rf were estimated. The processing and preservation of drugs like herbal ointment, creams is for the enhancement of the potency of drug, reduction in the dosage for clinical efficacy, suppression of toxicity and improvement in bioavailability and bio acceptability and also convenience of application.

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INTRODUCTION

Eczematous diseases are very common with an estimated prevalence more than 10% in the general population. 15-25% of all dermatological patients suffer from eczema. According to ayurvedic science eczema can be correlated with *vicharchika*. It occurs primarily in infants and children are affected with the disease and 60-70 % of those with mild to severe dermatitis continue to experience symptoms into adulthood^[1]. *Arka taila* is effectively used as topical application in *vicharchika*^[2]. 8 references of *arka taila* of the same formulation are found in classical texts. For the current study, reference of *Sharangdhar Samhita* has been sought.

The use of steroids results in long term ADR as it works also deteriorates body's own immunity. Hence, *Arka taila* is a feasible option and in the current study, SMP and standards have been developed for ointment formulation of *Arka taila*, as it offers a more practical and widely acceptable alternative.

MATERIAL AND METHODS

Material: Fresh leaves of *Calotropis gigantea* were collected from tal- junner, dist-pune, fresh rhizomes of *Curcuma longa* were procured from dist-solapur, these herbs were authenticated from Agharkar research institute, Pune, Maharashtra. *Sharshap taila* (mustard oil), Soft paraffin, Hard

paraffin, Microcrystalline wax, Bee's wax was purchased from local market, Open jacketed vessel, wet grinder, centrifuge machine, SS stirrer, white cotton cloth, were used for preparation of ointment.

Table no 1. Ingredients for the preparation of arka taila

Sr.no	Form of dravyas	Dravya	Quantity
1	<i>Kalka dravyas</i>	<i>Haridra</i>	600 gm
2	<i>Sneha dravyas</i>	<i>Sarshap taila</i>	2.4L
3	<i>Drava dravyas</i>	<i>Arka patra swarasa</i>	9.6L

Table no 2. Ingredients for the preparation of ointment

Sr.no	Content	Quantity
1	Oil <i>Arka taila</i>	1L
	Ointment bases	
	1. Soft paraffin	1.25 kg
2.	2. Hard paraffin	125 gm
	3. Microwax	50 gm
	4. Bees wax	75 gm

Method: Fresh paste (*kalka*) of *Curcuma longa* and juice (*swarasa*) of leaves of *Calotropis gigantea*, *murchhit* mustard oil, soft paraffin, hard paraffin, bee's wax, microcrystalline wax were used as raw material for the preparation of *arka taila* ointment. Initially *Arka taila* was prepared as per the reference of *sharangadhar samhita* with 1:4:16 proportion of paste, juice and oil respectively. To prepare the paste and juice in large scale; wet grinder, centrifuge machine were used respectively

and for the preparation of oil, open jacketed SS vessel of capacity 50L was used. In luke warm (60°C) *arka taila*, molten mixture of soft paraffin 125%, hard paraffin 12.5%, bee's wax 7.5% and microcrystalline wax 5% was added, mixed well in an open jacketed vessel and stirred till the formation of ointment in Stainless Steel vessel. Total three batches were prepared and analyzed physico-chemically.

HPTLC analysis of the prepared ointment was carried out by using mobile phase n-hexane: diethyl ether: acetic acid (9:3:1) and visualized by CAMG TLC scanner under 366 nm.

Observations and results

Table no 3 Organoleptic study of ointment

Organoleptic test	Batch 1	Batch 2	Batch 3
Shabda	Not significant	Not significant	Not significant
Sparsha	greasy	greasy	greasy
Rupa	Golden yellow	Golden yellow	Golden yellow
Rasa	-	-	-
Gandha	Strong Turmeric	Strong Turmeric	Strong Turmeric

In organoleptic analysis, the golden yellow colour of ointment was observed, ointments were greasy to touch and smell was strong and turmeric like.

Table no 4. Analytical study of ointment

Sr.no	Sample	pH	Viscosity	Spradeability
1.	Batch 1	6.25	4.575	30
2.	Batch 2	6.23	3.713	29.41
3.	Batch 3	6.20	3.600	30

In chemical analysis, pH was 6.227±0.0252, viscosity 3.963±0.533 and spreadability was 29.803±0.341.

Table no 5 Coinciding max R_f values of ointment

Batch 1	Batch 2	Batch 3
0.06	0.06	0.06
0.09	0.09	0.09
0.13	0.13	0.13
0.15	0.15	0.17
0.31	0.32	0.32
0.54	0.54	0.56
0.76	0.77	0.77

In HPTLC analysis, it was observed that coinciding max R_f 0.06 shows light green, 0.09 shows blue, 0.13 shows violet, 0.32 shows blue bands for ointment.

DISCUSSION & CONCLUSION

The processing and preservation of drugs like herbal ointment, creams aim at enhancement of the potency of drug, reduction in the dosage for clinical efficacy, suppression of toxicity and improvement in bioavailability and bio acceptability. Soft paraffin was used as emollient, heavy moisturizer and it is very greasy compound so that it has ability to penetrate deeper into skin^[3]. Hard paraffin was used to stiffen ointment bases, microcrystalline wax was used to bind the *arka taila*. Bee's wax was used as an emollient, general healer, smoothening and softening^[4]. The prepared ointment can be preserved in plastic containers. The developed analytical standard can be referred for further manufacturing of the same formulation.

In *twacha vikaras* there is equal importance of *shaman chikitsa*, which include all the topical applications like *lepa*, *pralepa*, *pradeha*, *malahar*. *Taila* has been primarily used in most of *vatapradhan vyadhi*. Out of all the available oils, *tila taila* is said to be the best. But as *sarshap taila* itself has *kushtaghna* property, it has been used as a base for this drug formation. *Sarshap taila* has *katu rasa*, *katu vipaka* and *ushna virya*^[5]. Also due to its *ushna*, *snigha guna* it has potential to reduce the vitiated *vata* and *katu rasa*, *vipaka* along with *ushna virya* will also help in *shaman* of locally vitiated *kapha* in *vicharchika*. It will also assist in reducing the *kandu* (pruritis) observed in *vicharchika*. *Haridra* possesses *tikta katu rasa*, *katu vipaka*, *ushna virya*^[5], this facilitates its usage in *vicharchika* by absorbing the *strava* (discharge) to reduce the *klinnata*. *Ark* also has *katu tikta rasa*, *katu vipaka*, *ushna virya*^[5]. It would reduce *kandu* and *pidika* formed due to vitiated *kapha dosha*, resulting in *sthanik* scrapping (*lekhana*) of the fatty *twacha*. Dryness (*rukshata*) in *twacha* caused due to *arka* and *haridra* will be regulated by the *sarshap taila*.

All the herbal contents in this formulation are anti- microbial^[6], anti- oxidant^[7], immunomodulator^[8].

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