

Original Article

Role of different media in *Karpanpatru Taila* Preparation

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Abstract

Total six samples of *Karpanpatru Taila* were prepared with *Murchchhita* and *Amurchchhita Sarshapa Taila* (mustard oil) by using three different liquid media i.e. *Gomutra*, *Takra* and *Kanji* by following classical method and analyzed. The pharmaceutical analysis revealed that the *Karpanpatru Taila* prepared with *Murchchhita Sarshapa taila* by using *Kanji*, *Gomutra*, *Takra* as a liquid media showed minimum loss i.e. 4.00%, 8.33% & 8.66 respectively in comparison to *Amurchchhita Sarshapa Taila* by using *Kanji*, *Gomutra*, *Takra* i.e. 5.5%, 10.68%, 12% respectively. Pharmaceutical drawbacks like excessive frothing and burning of eyes & nose were absent during the preparation of *Karpanpatru Taila* with *Takra* and *Kanji* while present in batch of *Gomutra*. Analytical study reveals that Acid value was negligible increased after even 6 month in the samples of *Murchchhita Karpanpatru Taila* while significant increased in the samples of *Amurchchhita Karpanpatru Taila*. Saponification value was decreased in the samples of *Murchhita Karpanpatru Taila* while increased in the samples *Amurchchhita Karpanpatru taila*. Microbial growth was found absent in all the samples of *Karpanpatru Taila* even after 6 months.

Key words: *Sneha Kalpana*, *Murchchhana*, *Gomutra*, *Takra*, *Kanji*, Acid value, Saponification value.

Introduction

Basically *Karpanpatru Taila* is derived from a compound name as Karpogi Paste. This is mentioned in Siddha pharmacopeia and has been utilized to treat vitiligo since mid 50's. The clinical users were quite satisfied with its results but complain of its short life was very frequent due to contamination of fungus. Thus to overcome this problem of *Karpanpatru Lepa*, another *Kalpana* was formulated by the scholar Zhankana et.al. during her Ph.D. research work i.e. *Karpanpatru Taila* prepared by using the same ingredients under the code name Vit-8 oil. This oil was prepared with *Gomutra* as a media due to their best *Kusthaghna* effect. But during preparation of Vit-8 oil some pharmaceutical drawbacks were faced. i.e. excessive frothing, burning of eyes & nose and headache etc. So to overcome these drawbacks this work has been selected for pharmaceutical study under the name of *Karpanpatru Taila*.

Karpanpatru Taila was prepared by using three different media like i.e. *Gomutra*, *Takra* and *Kanji* to compare pharmaceutically the role of media. Generally *Sneha Kalpana* is used by all possible route of administration. There are so many controversies regarding the preparation of *Sneha Kalpana* with different liquid media and shelf life too. Therefore, the entire samples were also prepared by *Murchchhita* and *Amurchchhita Taila* to overcome the *Gandha*, *Varna* and *Rasotpatti* in *Taila*. Thus, following aims and objectives were considered for the present study.

Aims and Objectives

- 1) To establish a suitable method for preparation of *Karpanpatru Taila*.
- 2) To observe and establish the role of media during the preparation of *Karpanpatru Taila*.
- 3) To establish the shelf life of *Karpanpatru Taila* prepared by *amurchchhita Sarshapa Taila* and *Murchhita Sarshapa Taila*.

Material & Methods

The *Karpanpatru Taila* was prepared by using general principles of *Sneha Kalpana* as per *Sharangdhara Samhita*, where *Murchchhana* of *Taila* was carried out as per the reference of *Bhaishajya Ratnavali Jwaradhikara*¹. *Karpanpatru Taila* was prepared with *Murchchhita* and

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Amurchchhita Sarshapa Taila using *Kalka Dravya*² like *Bakuchi*, *Tuvaraka*, *Krishna Jeeraka*, *Kalaunji*, *Narikela*, *Vatam*, *Postdana* in equal quantity, *Hartala* 1/20th part of each ingredient and *Drava Dravya* i.e. *Gomutra*, *Takra*, *Kanji* were taken as per the general ratio of *Sneha Kalpana*³ i.e. 1:1/4:4. *Takra* was prepared as per the reference of *Sushruta Samhita*⁴. *Kanji* was prepared as per the reference of Vijyanabodhani commentary of D. A. Kulkarni on *Rasa Ratna Samucchaya*⁵.

Taila was heated till it became moisture free (at 160°C) as per general practice of tradition and after slight cooling (at 90°C), *Kalka* was added which was followed by addition of *Drava Dravya*. Along with it, four times of water i.e. equal to *Drava dravya* was added in the preparation of *Karpanpatru Taila* with *Takra*⁶. Then mixture was subjected to *Sneha Paka* over *Madhyamagni till Siddhi Lakshanas* (chief desired characteristics)⁷ were obtained. The heating duration was adjusted in such a manner that whole process would get completed by five nights⁸.

Observation & Results

During the preparation of *Karpanpatru Taila* with *Gomutra* excessive frothing, burning of eye & nose and headache etc. were observed. Acidic smell was smelt during the preparation of *Karpanpatru Taila* with *Takra* and *Kanji*. Near to final stage, temperature was slightly raised. More yield was obtained in the *Karpanpatru Taila* prepared with *Murchchhita Sarshapa Taila* (Table 1 and 2) and according to liquid media maximum yield was obtained in the *Karpanpatru Taila* prepared with *Kanji* as a liquid media.

Analytical phase of the study includes the organoleptic and physicochemical evaluation along with microbial growth. The organoleptic characters examined were *Varna* (colour/appearance), *Gandha* (odour) and *Sparsha* (consistency), while the physicochemical parameters like pH, specific gravity, total solid contents of the liquid media (Table 3) and refractive index, specific gravity, acid value, saponification value etc, of the *Karpanpatru Taila* (Table 4, 5, 6) were analyzed as per the standard methods⁹.

Organoleptic Characters

Amurchchhita batch of *Karpanpatru Taila* prepared with *Gomutra* was dark brown in colour whereas brown colour was observed in the samples of *Karpanpatru Taila* prepared with *Takra* and *Kanji*, while all samples of *Murchchhita* batch of *Karpanpatru Taila* were dark red in colour. Consistency was oily and odour of *Gomutra* was felt in *Karpanpatru Taila* prepared with *Gomutra*, while in other samples non specific odour were smelt. Translucency in all the samples of *Karpanpatru Taila* were observed.

Physico-Chemical Characters

Specific gravity index remains unchanged in the initial and 6 months older sample of *Karpanpatru Taila*. Acid value was found increased after *Murchchhana* in all

samples of *Karpanpatru Taila*. This may be due to incorporation of some acid matter from *Murchchhana Dravya* in *Taila*. Acid value and saponification value were increased in the 6 months older sample of *Karpanpatru Taila* prepared by using *Amurchchhita Sarshapa Taila*. In case of *Karpanpatru Taila* prepared by using *Murchchhita Sarshapa Taila* increase of acid value was marginal and saponification value was decreased.

Discussion

Fine powdered *Kalka Dravyas* were taken in the processing of *Sneha Kalpana* to get maximum extraction. With the help of little amount of water it was converted into a bolus form. By doing this, surface area of *Kalka* was reduced which comes in contact with *Taila*. So *Kalka* didnot burn when it was added into the warm oil. During heating of *Sarshapa Taila* pungent, vapours evaporate which causes burning of eye and nose. These vapours may be of sulphur which are liberated by mustard oil. After demosturisation, colour of *Taila* was converted into light yellow from dark yellow because of shifting of chemical bonds due to thermal power effect. During the addition of *Kalka* frothing was seen. It may be due to evaporation of moisture content from *Kalka* and its fine particle size. The colour of *Taila* was dark red and characteristic odour was perceived in the batches of *Murchchhita Karpanpatru Taila*. This odour may be due to *Kalka Dravyas* like *Manjishtha*, *Hribera*, *Haridra* etc. Consistency of *Taila* was thick due to presence of fine particles of *Kalka* that are filtered along with *Taila*.

In *Karpanpatru Taila* prepared with *Takra*, four times of water was added to carry out proper *Paka*⁷. *Sneha Paka* was carried out for 5 days because *Gomutra*, *Takra* and *Kanji* were used as *Drava Dravya*. Excessive frothing, burning sensation in eyes and nose and headache occurred during preparation of *Karpanpatru Taila* with *Gomutra*. It may be due to the liberation of ammonia present in *Gomutra*. Smell of *Gomutra* spread in all over the surrounding area during the *Paka*. More loss was found due to fineness of particle size of *Kalka* resulting in increase of surface area and thus more absorption of *Taila*. Secondly, it may be due to manual handling. Weight of the *Kalka* increased after filtration. It may be due to absorption of moisture and *Taila* by *Kalka*.

Observation shows that more loss was found in the *Amurchchhita Karpanpatru Taila*. It may be due to the moisture content present in *Sarshapa Taila* which evaporates during the heating of *Taila* before subjecting it to *Paka*. Weight of *Kalka* after filtration increased in all batches of *Karpanpatru Taila* due to presence of solid contents of media viz. *Gomutra*, *Takra*, *Kanji* and absorption of *Taila* and moisture content by *Kalka*.

The specific gravity and refractive index remain unchanged in the initial and 6 months older sample of

Table 1: Comparative results obtained during of preparation of *Murchchhita Karpanpatru Taila* with *Gomutra, Takra, Kanji*

Parameters	KP Taila with GM	KP Taila with TK	KP Taila with KJ
Initial quantity of oil (L)	3	3	3
Initial quantity of Kalka (g)	750	375	750
Quantity of obtained oil (L)	2750	2740	2863
Weight of Kalka after filtration (g)	1459	916	1500
Colour of Kalka	Dark Brown	Dark Brown	Dark Brown
Total loss (ml.)	250	260	136.70
Loss in %	8.33	8.66	4.0
Colour of finished product	Dark Red	Dark Red	Dark Red

Table 2: Comparative results obtained during of preparation of *Amurchchhita Karpanpatru Taila* with *Gomutra, Takra, Kanji*

Parameters	KP Taila with GM	KP Taila with TK	KP Taila with KJ
Initial quantity of oil (L)	3	3	3
Initial quantity of Kalka (g)	750	375	750
Quantity of obtained oil (L)	2680	2640	2816.76
Weight of Kalka after filtration (g)	1427	956.7	1459.3
Colour of Kalka	Brown	Brown	Brown
Total loss (ml.)	320	360	166.7
Loss in %	10.68	12	5.56
Colour of finished product	Dark Brown	Brown	Brown

GM - Gomutra, TK - Tkra, KJ - Kanji

Table 3: Physico-chemical parameters of Medias

Media	pH	Specific gravity	Solid content (5)
<i>Gomutra</i>	7.63	1.032	7.003
<i>Takra</i>	4.13	1.211	5.929
<i>Kanji</i>	3.35	1.0132	3.643

Table 4: Physico-chemical parameters of *KP Taila* prepared with *Gomutra*

Parameters	AKP		MKP	
	0 Month	6 month	0 month	6 month
Specific gravity	0.9146	0.9170	0.9243	0.9290
Refractive index	1.4750	1.4740	1.4740	1.4750
Acid value	6.12	7.16	5.13	5.95
Saponification value	168.06	169.99	171.44	170.30

Table 5: Physico-chemical parameters of *KP Taila* prepared with *Takra*

Parameters	AKP		MKP	
	0 Month	6 month	0 month	6 month
Specific gravity	0.9087	0.9097	0.9120	0.9115
Refractive index	1.4730	1.4740	1.4740	1.4740
Acid value	4.63	5.62	8.49	8.68
Saponification value	165.63	166.89	175.49	168.39

Karpanpatru Taila. It indicates no drastic changes occur to the prepared oil even after six months of storage. Acid value can be defined as the number of milligrams of potassium hydroxide required to neutralize the free acids present in 1 g of sample of oil. And Saponification value can be defined as the number of milligrams of potassium hydroxide

required to neutralize the fatty acids resulting from complete hydrolysis of 1 g of the sample of oil. Generally, rancidity causes free fatty acid liberation, hence acid value and saponification value are used as an indication of rancid state¹⁰. Here acid value and saponification value were increased in the 6 months older sample of *Karpanpatru*

Table 6: Physico-chemical parameters of KP Taila prepared with Kanji

Parameters	AKP		MKP	
	0 Month	6 month	0 month	6 month
Specific gravity	0.9093	0.9085	0.9120	0.9142
Refractive index	1.4730	1.4730	1.4730	1.4740
Acid value	5.83	7.20	8.09	9.24
Saponification value	169.72	171.18	176.63	172.14

Taila prepared by using *Amurchchhita Sarshapa Taila*. In case of *Karpanpatru Taila* prepared by using *Murchchhita Sarshapa Taila* increase of acid value was marginal whereas saponification value was decreased. It is indicative of occurrence of rancidity in *Karpanpatru Taila* prepared by using *Amurchchhita Sarshapa Taila*. The results also prove the importance of the process of *Murchchhana* of *Sneha* prior to the preparation of *Sneha Kalpana*.

All the samples of *Karpanpatru Taila* prepared by both *Amurchchhita* as well as *Murchchhita Sneha* were found to be free from any fungal and bacterial growth. Oils are generally immune to microbiological contamination due to less moisture content. Microbial growth in oils is found only if there is more water content. Here negative results for fungal and bacterial growth test should be considered as important findings and suggests all the samples are completely free from microbial contamination and contain moisture up to considerable limits.

Conclusion

Karpanpatru Taila is developed on basis of a Siddha compound name as "Karpogi paste" which is mentioned in Siddha pharmacopeia and utilized to treat vitiligo. Drawbacks like excessive frothing, burning in eye and nose and headache etc. were absent in *Karpanpatru Taila* prepared with *Takra* and *Kanji* as a liquid media in both groups i.e. *Amurchchhita* & *Murchchhita*. Fine powdered

Kalka should not be taken in the preparation of *Sneha Kalpana* to achieve maximum yield. Pharmaceutically *Kanji* can be considered as a best liquid media for the preparation of *Karpanpatru Taila* from the point of yield. *Murchchhana* process should be taken as mandatory for *Sneha Paka*. No change was found in organoleptic characters and no significant change was found in physicochemical characters of all samples of *Karpanpatru Taila* even after 6 month at normal storage conditions.

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हिन्दी सारांश

करपनपत्रु तैल के निर्माण में विभिन्न माध्यमों का महत्त्व

मनीषा गोयल, बी. जे. पटगिरि, बी. रविशंकर एवं पी. के. प्रजापति

करपनपत्रु तैल का निर्माण मूर्च्छित और अमूर्च्छित तैल के द्वारा तीन विभिन्न माध्यमों का प्रयोग करके कुल छः सैम्पल बना कर विश्लेषण किया गया। निर्माणात्मक अध्ययन में करपनपत्रु तैल जो कि मूर्च्छित तैल तथा काँजी, गोमूत्र तथा तक्र में क्रमशः ४.६६%, ८.३३%, ८.६६ तथा अमूर्च्छित तैल में ५.५%, १०.६८%, १२% क्रमशः की हानि पायी गयी। करपनपत्रु तैल जो कि तक्र और काँजी से बनाया गया उसमें गोमूत्र के तुलना में अधिक फेन तथा आंखों और नाक में जलन नहीं पाया गया। विश्लेषणात्मक अध्ययन में पाया गया कि मूर्च्छित तैल की तुलना में अमूर्च्छित तैल में छः महीने के बाद एसिड मात्रा में महत्त्वपूर्ण बढ़त देखी गयी। सेपोनिफिकेशन मात्रा में अमूर्च्छित तैल में कमी तथा मूर्च्छित तैल में बढ़त देखी गयी। छः महीने के बाद भी माईक्रोवियल ग्रोथ सभी सैम्पल में अनुपस्थित पाया गया।