



**STANDARDIZATION, PHYSICO-CHEMICAL ANALYSIS &
PHARMACEUTICAL REVIEW W.S.R. TO DHATURADIKSHEERA
TAILA-A REVIEW**

Dr. Anshuman Rajnala^{1*}, Dr Srishti Balbhadra² and Dr Amiya Bhonsle³

¹Asst. Professor Dept. of Rasashastra & Bhaishajya Kalpana Bharti Ayurved Medical College & Hospital Durg (Chhattisgarh).

²Asst. Professor Dept. of Rasashastra & Bhaishajya Kalpana Bharti Ayurved Medical College & Hospital Durg (Chhattisgarh).

³Asst. Professor & Consultant Dept. of Panchakarma Bharti Ayurved Medical College & Hospital Durg (Chhattisgarh).

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***Corresponding Author**

Dr. Anshuman Rajnala

Asst. Professor Dept. of
Rasashastra & Bhaishajya
Kalpana Bharti Ayurved
Medical College & Hospital
Durg (Chhattisgarh).

ABSTRACT

Taila kalpanas (medicated oils) are the integral part of Ayurvedic treatment. Tailas are used in treatment of diseases explained in Astangas of Ayurveda for both bahya and abhyantara chikitsa (internal and external therapies).^[1] According to the condition of the disease, the processing of taila with the specific ingredients is the need in clinical practice. Dhaturadi ksheera taila prepared out of Nirgundi patra (leaf), Karvira patra, Dhatura patra, Erand patra, Arka patra, Karanja patra is explained in Charaka samhita for vata and shoolahara purposes. And also with added kalka dravyas like Triphala, Musta, hrubera & hardira churna in preparation of taila. in this ingredient Dhatura nirgundi (Vitex negundo), karvira, erand patra, arka patra & karanja patra is all

of them identified vaatahara and shoolahara drug used in the management of shoola pradhana vata vyadhis (pain dominant vata diseases) with reference to Charak samhita.^[2] As Dhaturadi ksheer taila is proved to be a potent vata and shoola hara, the current study was undertaken to standardize, physico-chemical analysis & pharmaceutical review for this formulation.

KEYWORDS: Dhaturadi dravyas, kalka dravyas, standardization, physico-chemical analysis & Pharmaceutical review.

INTRODUCTION

Taila kalpanas (medicated oils) are the integral part of Ayurvedic treatment. Tailas are used in treatment of diseases explained in Astangas of Ayurveda for both bahya and abhyantara chikitsa (internal and external therapies). According to the condition of the disease, the processing of taila with the specific ingredients is the need in clinical practice^[1]. Dhaturadi ksheera taila prepared out of nirgundi patra (leaf), Karvira patra, Dhatura patra, erand patra, arka patra, karanja patra is explained in Charaka samhita for vata and shoolahara purposes. And also with added kalka dravyas like Triphala, Must & hardira churna in preparation of taila. In this ingredient Dhatura, nirgundi (*Vitex negundo*), karvira, erand patra, arka patra & karanja patra is all of them identified vaatahara and shoolahara drug used in the management of shoola pradhana vata vyadhis (pain dominant vata diseases) with reference to Charak samhita^[2]. This formulation prepared by own reference only the mentioned all drugs in samhitas who are related to beneficale for vataja vyadhi and here i prepare this formulation to give clinically to cure vataja vikaras patient in our hospital to give apply for externally used only. As Dhaturadi ksheer taila is proved to be a potent vata and shoola hara, the current study was undertaken to standardize, physico-chemical analysis & pharmaceutical for this formulation.

AIMS AND OBJECTIVE

1. To know standardization, physico-chemical analysis in dhaturadi ksheer taila.

Drug Review^[3]

1. Dhatura

Botanical name – Dhatura metal Linn

Family: Solanaceae

Synonyms: shivpriya, tripushpa, kanaka etc.

Guna:

Rasa: Madhura, Katu, Kashaya, Tikta

Virya: Ushna

Guna: Tikshna, Ruksha, Guru

Vipaka: Katu

Doshakarma: Kaphavatashamaka

Rogaagnakarma: Madaka, varnya, vatakaraka, jwaraghna, kushtaghna, vishaghna, vedanasthapana etc.

Amayika prayoga: tamaka shwas, udarshula, pittashamarishula, vrukkashula amavatha, sandhishotha etc.

2. Eranda

Botanical name: Ricinus communis Linn

Family: Euphorbiaceae

Kula: Erandakula

Gana: Charak : Bhedaniya, svedopaga, angamardaprashamana, mudhuraskanda.

Sushruta: Vidarigandhadi, Adhobhagahara, Vatasamashana.

Synonyms: vyagrapukschha, snehaprada, taruna, vardhamana, dirghadanda etc

Guna:

Rasa: Madhura, katu, Kashaya

Guna: guru, snigdha & Tikshna

Virya: Ushna

Vipaka: Madhura

Doshakarma: Kaphavatashamaka

Rogagnakarma: shulaghna, sothaghna, katishulaghna, bastirogahara, jvaraghna, shwasghna, kustaghna, amavatahara, snehana, vedanasthapanana, krimighna, bhednai etc

Amayika Prayoga

- Eranda taila is considered to be good & safe purgative.
- The eranda mula kwatha with shunthi is given in case of Katishula, Grudhrasi, parshvashula, hradyashula, amavata & sandhishotha etc.

3. Karvira

Botanical name: Nerium Indicum Mill.

Family: Apocynaceae

Kula: Kutajakula

Gana: Charak: Tiktaskanda, Kusthaghna

Sushruta: Lakshadi, Shirovirechanadi

Synonyms: swetapushpa, raktapushpa, ashwamaraka, shatkumbha.

Guna:

Rasa: Katu, Tikta, Kashaya

Guna: Tikshna, Laghu, Ruksha

Virya: Ushna

Vipaka:Katu

Doshakarma: kaphapittashamaka

Rogaghana Karma: varnaropana, netrarogahara, jwarahara, sothaghna, hradya, kusthaghana, kandughna, & dipana.

Amayika prayoga

- Mula in smaller dose acts on hradya its simulate the action of digitalis
- Mula acts as mutrala.
- It is useful in Jalodara associated with hrdroga.
- The mula twak & patra is used in all skin diseases externally.

4. Nirgundi

Botanical Name: Vitex negundo Linn.

Family: Verbenaceae

Kula: Nirgundikula

Gana:

Charak: Vishaghna, Krimighna

Sushruta: Surasaadigana.

Synonyms: Shephali, Suvaha, Sinduvaraka, Indrayani etc.

Guna:

Rasa: Tikta, Katu, Kashaya

Guna: Laghu, Ruksha

Virya: Ushna

Vipaka: Katu.

Doshaghna: Kaphavatashamaka

Rogaghna karma: Vishaghna, Balya, Rasayana, dipana, krimighna, sulaghna, amavatahara, vedanasthapana, krimighna, ruchikara etc.

Amayika prayoga

- It is useful in all type of sotha like phuphusaavarashotha, udaraavarashotha, sandhishotha & amavatika sandhi shotha etc.

5. Arka patra

Botanical name: Calotropis Procera (Ait) R.Br.

Family: Asclepiadaceae

Kula: Arkakula

Gana:

Charak: Bhedaniya, Vamanopaga, Svedopaga

Sushruta: Adhobhagaha, Arkaadi.

Synonyms: Raktarka, Raktapushpa, Aasphota, Ksheerparni, sadapuspa, Arkaparna etc

Guna:

Rasa: Katu, Tikta

Guna: Laghu, Ruksha, Tikshna

Virya: Ushna

Vipaka: Katu

Doshakarma: Kaphavatashamaka

Rogagnakarma: Raktashodhaka, Balya, Rasayana, kaphaghna, dipana, pachana, svedajanana, vranaropana, plihaghna, gulmaghna, arshoghna, Vamaka etc.

Amayika Prayoga

- It is useful in pratishyaya, galashotha, Shwasa Nalika shotha, Tamaka swasa etc.
- Arkadichurna is given with sunthi and it also relieves Sandhishula.
- It is useful Sandhishotha, twak vikara.
- In Amavatha it is given with Haridra.

6. Karanja patra

Botanical name: Pongamia Pinnata Linn.

Family: Fabaceae

Kula: Shimbikula

Gana: Charak: Kadughna, virechana, katukaskanda, tiktaskanda

Sushruta: Araghvadhadi, varunadi, arkadi, shirovirechanadi, kaphasamshana.

Synonyms: Naktamal, snigdhapatra, shlipadari, lajapushpaka etc

Guna:Rasa: Katu, Tikta,kashaya

Virya: Ushna

Guna: Tikshna

Vipaka: Katu

Doshakarma: Kaphapittashamaka

Rogaghnakarma: kandughna, vranashodhana, vishaghna, bhedana, shothahara, krimihara, Shirovirechaka, amavataghna, dipana, pachana & kushtaghna etc.

Amayika Prayoga

- It act as vatanulomana and mridu virechaka.

7. Haritaki

Botanical name: Terminalia chebula Retz.

Family: Combretaceae

Kula: Haritakikula

Gana: Charak: Prajasthapana, jvaraghna, kusthaghna, arshoghna

Sushruta: Triphala, Amalakyadi, parushakadi, trivrtadi.

Synonyms: abhaya, pathya, vijaya, jivanti, rohini, chetaki etc

Guna: Rasa: Kashaya Pradhan Lavana varjita Shadarasa

Guna: Laghu, Ruksha

Virya: ushna

Vipaka: Madhura

Prabhava: Tridoshashamaka

Doshakarma: tridoshahara

Rogaghnakarma: Rasayana, chakushya, anulomana, krimighna, shothahara, vishaghna, gulmahara, adhamanhara, shulaghna, mutrakrichchranivaraka, balya, medya, dipana, pachana etc.

Amayika prayoga

- For vatanulomana, Haritaki, pippalimula and bilva is given.

8. Bibhitaki

Botanical name: Terminalia Belerica Roxb.

Family: Combretaceae

Kula: Haritaki kula

Gana: Charak: Jvaraghna, Virechanopaga

Sushrut: Triphala, Mustadi.

Synonyms: aksha, kalidruma, bhootavasa, karshaphala, tailaphala

Guna: Rasa: Kashaya

Guna: Ruksha, laghu

Virya: Ushna

Vipaka: Madhura

Doshakarma: Tridoshahara

Rogaghnakarma: bhedana, krimighna, vataghna, shothahara, vedanasthapana, raktasthambana, dipana, pachana, dhatuwardhaka etc.

Amayika prayoga

- In all types of shotha, vibhitaki churna lepa helps to allay daha & shula.
- In granthi & visarp a hot paste is prepared with bark of vibhitaki and applied locally.

9. Amalaki

Botanical name: *Emblica Officinalis* Gaertn.

Family: Euphorbiaceae

Kula: Erandakula

Gana : Charak : Vayasthapana, Virechanopaga

Sushruta: Triphala, Parushakadi

Synonyms: Dhatriphala, shivam, amrutaphala, shriphala, vayasya, vrutaphala etc

Guna: Rasa: Amla Pradhana lavana varjita shadrarsa (amla, kashaya, madhura, tikta & Katu)

Guna: Ruksha, & Laghu

Virya: Shita

Vipaka: Madhura

Doshakarma: Tridoshashamaka

Rogaghnakarma: rasayani, mriduvirechaka, mutrala, dipana, stambhana, dahaprashamana, medya, chakushya etc.

Amayika prayoga

- In vatarakta, kwatha of amalaki & hardira given with madhu.

10. Musta

Botanical name: *Cyperus rotundus* Linn.

Family: cyperaceae

Kula: mustaka kula

Gana: charak : truptighna, lekhanitya, kandughna, stanyashodhana.

Sushruta: mustadi, vachadi.

Synonyms: kuruvinda, varidanamakam, granthila, sugandhi etc

Guna: rasa: tikta, katu, kashaya

Guna: laghu, ruksha

Virya: shita

Vipaka: katu

Doshakarma: kaphapittashamaka

Rogagnakarma: grahi, agnidipak, pachana, vranaropaka, krimighna, balya, vishaghna etc

Amayika prayoga

- In vatarakta of kaphaja type a kwatha is prepared with musta, draksha & haridra & mixed with madhu & given.
- In vrana, the fresh tuber grained and mixed with ghrita, applied externally.

11. Haridra

Botanical name: *Curcuma Longa* Linn.

Family :zinziberceae

Kula:

Synonyms: Nisha, Yoshitapriya, hattavilasini, krimighni, pita, kaanchani, varavarnini, gouri.

Gana: charak: lekhaneya, kusthaghna, kandughna, krimighna, shirovirechana.

Sushruta: haridradi, mustadi, shleshmasamshamana

Vagabhatta: haridradi, mustadi.

Guna: rasa: tikta, katu

Guna: Ruksha, Laghu

Virya: Ushna

Vipaka: katu

Doshakarma: Kaphavatahara, lekhaneya, vishaghna, varnya.

Rogagnakarma: Prameha, kushta, krimi, kandu, vrana, pandu, kamala

Amayika prayoga

- In vyanga, haridra & rakta chandana are made into paste with Mahish dugdha, & applied externally.
- In Dadru kushta & Shlipada, haridra churna is taken with guda & gomaya

Taila Murchchana

“Triphala payod rajani hribera lodhranvita|
sucipushpa vataroha neelakastasyashca padamshika ||

Durgandham vinahanti tailamrumam saurabhyamakurvate|”(cha.su.13/14)

Kalka dravya

1. Triphala
2. Musta
3. Rajani
4. Hrivera
5. Lodra
6. Sucipushpa
7. Vatankura
8. Nalika

Method

All in equal quantity, total quantity must be 1/4th to that of Tila taila

- Tila taila: 1 part
- Jala : 4 parts

Procedure

- Heat the pan till oil makes it free forth.
- Add 4 parts of water along with powder of 1-8 drugs
- Boil it on moderate heat till only the oil portion remains.
- Filter and use it for the preparation of other medicated oil.
- By the process unpleasant odour of the oil is removed.
- It obtains good odour colour and fragrance.

METHOD AND MATERIAL**Identification & Authentication**

- Raw drugs and wet drugs identified and authenticated by Dept of Dravyaguna in Bharti Ayurved medical college & hospital Durg.

Ingredients

Sr. No.	Name of drugs	Botanical name	Qty
1	Dhatra patra	Dhatra metal Linn	100g
2	Eranda patra	Ricinus communis Linn	100g
3	Nirgundi patra	Vitex negundo Linn	100g
4	Arka patra	Calotropis Procera (Ait) R.Br.	100g
5	Karvira	Nerium Indicum Mill	100g
6	Karanja	Pongamia Pinnata Linn	100g
7	Haritaki	Terminalia chebula Retz	17g
8	Bibhitaki	Terminalia Belerica Roxb	17g
9	Amalaki	Emblica Officinalis Gaertn	17g
10	Musta	Cyperus rotundus Linn.	27g
11	Haridra churna	Curcuma Longa Linn	27g
12	Godugdha		1.5ltr
13	Jala		1.5ltr
14	Tila taila		5ltr

Equipment & Instrument

- Khalwa yantra
- Patra
- Chullika
- Measuring glass
- Mixer
- Spoon
- Cloth

Method of preparation

- All kalka dravya make small pieces and to make fine powder in khalwa yantra & also make a bolus.
- Take one patra and pour in tila taila filled in patra and to kept in Chullika.
- When its mild warm to tila taila added equal quantity to Godugdha and Jala.
- Continuesouly stirring with spoon in patra in mild heat.
- When sneha lakshna shown in Taila paka then do sneha pariksha and to filtered with cloth in another patra.
- Then to kept in Glass vessel and air tight condition to use medically purposed.

Observation

- Odour: Aushadha Gandha
- Color: Raktabha-Pitabha Varna

Precaution

- Carefully added kalka dravya in taila paka
- When added godugdha and jala in taila paka to carefully added.

Total prepared quantity:

- Quantity taken : 8.731 ltr
- Quantity obtain: 4.300 ltr
- Gain /Loss: 4.431 ltr

Therapeutic dose: Need full

Vehicle/ Anupana: Roganusara

Main Action & uses:

- Vataj vikara
- Vatavyadhi or Vatashamaka

Standardization Parameter of Dhaturadiksheera Taila^[4]**Parameter are**

- Organoleptic characters
- Rf Value at 25⁰C
- Viscosity
- Iodine value
- Saponification value

Table 1: Standardization Parameter for Dhaturadi Ksheer Taila.^[4]

Parameter	Value
Organoleptic Characters	Color: yellowish brown Odour: Fragrant Appearance: viscous Touch: oily
Acid value	4.34+ ₋ 0.34
Rf value	Ethyl acetate fraction 0.07, 0.12, 0.25, 0.45, 0.52, 0.64
Viscosity	1.54+ ₋ 0.03
Iodine value	60.50 + ₋ 4.97
Saponification value	520.43+ ₋ 4.97

Physico Chemical Analysis^[5]

The following physico-chemical parameters of Dhaturadiksheera Taila prepared in mrdu were assessed by means of scientific techniques.

Refractive index

The refractive index (n) of a substance with reference to air is the ratio of the sine of the angle of incidence to the sine of the angle of refraction of a beam of light passing from air into the substance. It is the measure of number of molecules the light ray hits when it traverse through specific paaka of taila. It is the direct measure of active ingredients present in taila.

Acid value

It is defined as amount of potassium hydroxide in milligrams required to neutralize the free fatty acids present in 1 gram of oil. It indicates free fatty acids [FFA] present in the taila. Liberation of free fatty acid of taila is due to hydrolysis of triglycerides and promoted by reaction of taila with moisture.

Saponification value

It is defined as amount of potassium hydroxide in milligrams required to neutralize the fatty acids resulting from complete hydrolysis of 1 gram of oil or fat. It is inversely proportional to the average molecular weight of fatty acids present in the oil. Long chain fatty acids have low saponification value and short chain have high saponification value. Short chain fatty acids are readily absorbed and help in potential drug delivery.

Iodine value

It is defined as the weight of iodine absorbed by 100 parts weight of sample of fat or oil. It is a direct measure of unsaturation. This unsaturation is in the form of double bonds, which react with iodine compounds. Higher the iodine value more is unsaturated bond in taila. High level indicates taila has rich source of poly unsaturated fatty acids that possess health benefits like regulating cholesterol levels.

Mineral oil test

Indicates the presence of mineral oil in specific sample which is also an indicator of rancidity.

Rancidity test

Indicates the spoilage happened to taila either by moisture or by some other materials.

Loss on drying [LOD]

It determines the volatile matter i.e. water drying off from the drug.

RESULTS

Table 2: Physico-Chemical Parameters of Dhaturadiksheer Taila.^[5]

Parameters	Tila taila	Dhaturadiksheera taila
		Mrudu
Colour	Yellowish brown	Pale brown
Odour	Characteristic	Pleasant
Refractive index	1.463	1.469
Acid value	4.24	7.27
Saponification value	200.34	169.61
Iodine value	111.48	103.29
Mineral oil test	-ve	-ve
Rancidity test	-ve	-ve

Table 3: Loss on Drying AT 105⁰C of Kalka-Dhaturadiksheera Taila.^[5]

Sample of Kalka	Percentage Lod
Mrudu Paka	54.56% W/W

Table 4: Standards of Other Ingredients.^[5]

Sample	P ^H of Godugdha
Mrudu	3.42

Table 5: Phyto-Chemical Properties of Dhaturadiksheera Taila.^[5]

Evaluation Parameters	Observation
Carbohydrates	+++
Amino Acids	+
Glycosides	++
Flavonoids	++
Alkaloids	+
Tannins	++
Steroids	-

DISCUSSION

- The Refractive index of mrdu of Dhaturadiksheera Taila is higher than tila taila which indicates that active ingredients are incorporated in Dhaturadiksheera taila.
- High Acid value indicates the presence of free fatty acids in the sample. It implies that mrdu paaka having highest acid value is more susceptible to rancidification.
- Saponification value was comparatively high in mrdu paaka. This signifies more amount of short chain or low molecular weight fatty acids present in mrdu paaka which indicates comparatively high penetration co-efficient. This can impart mrdu paaka a better penetration of gastric mucosa than other paaka when used for snehapaana (drinking of sneha).

- Iodine value was found higher in mrdu paaka indicating more amount of unsaturated fatty acids present in mrdu paaka and thereby the susceptibility to rancidification.
- In analytical study of Dhaturadiksheera Taila, the loss on drying, iodine value and acid value were less in Mrudu paaka indicating fewer chances of early rancidity and thereby a prolonged shelf life.
- There was more moisture content (indicated by highest Loss on drying value) in mrdu paaka kalka.

CONCLUSION

On Analytical study of Dhaturadiksheera Taila, the loss on drying, iodine value and acid value were found to be high in mrudu paaka indicating fewer chances of early rancidity whereas Saponification value were higher in mrdu paaka.

BIBLIOGRAPHY

1. Sahrangadhara. Sharangadhara Samhita, Madhyam Khand 7/194. 6th ed. Varanasi: Chaukhamba Orientalis, 2005; 398, 137.
2. Trikamji Y. Charaka Samhita, Sutrasthana 13/133. Varanasi: Chaukhamba Surbharti Prakashan, 2008; 82, 738.
3. Data Base of Medicinal Plants published by Govt of Ayush New Delhi.
4. API & AFI Data base published by Govt of Ayush New Delhi.
5. Patil Rupesh Vilas & Manojkumar A K / Int. J. Res. Ayurveda Pharm. 8 (5), 2017 entitled
6. "Physico Chemical Analysis of Trividha Sneha Paaka of Kottamchukkadi Taila" accepted on dated 30.07.2017.