Pharmacognostical and Pharmaceutical Evaluation of *Nishadita* - An Ayurvedic Oil Based Medicine

Krishna Kumar1, D. B. Vaghela2, Harisha C. R.3, Shukla V. J.4

1MS Scholar, Department of Shalakya Tantra, IPGT &RA, GAU, Jamnagar, India
2Head and Associate Professor, Department of Shalakya Tantra, IPGT &RA, GAU, Jamnagar, India
3Head, Pharmacognosy Lab
4Head, Pharmaceutical Chemistry Lab, I.P.G.T and R.A., Gujarat Ayurved University, Jamnagar, Gujarat, India

Abstract: Background: *Nishadita* is a Sneha Kalpana, indicated in the management of Mukharoga. Objective: Present study is aimed to look out on herbal drugs used in the preparation of *Nishadita* and standardization of pharmacognostical, physicochemical parameters and HPTLC Evaluation. Methods: Identification and authentication was done by pharmacognostical study i.e. organoleptic characters and powder microscopy. Physicochemical evaluation and HPTLC study was carried out of final product. Results: Pharmacognostical study shows starch grains, bordered pitted vessel oil globules, group of fibersoleoresins etc. are the diagnostic characters. Conclusion: Identification, Authentication of Herbal drug used in the preparation. Physicochemical evaluation has been carried out of prepared drug which is further useful for standardization of *Nishadita* and other researches. The presence of oil globules, endosperm fragments, pollen grain cork cells were the characteristic features observed in the microscopy of drug combination. Refractive index of *Nishadita* found 1.4820, specific gravity 0.9148, iodine value 92.68, saponification value 183.41 and acid value is 6.05.

Keywords: *Nishadita*, Pharmacognosy. Phytochemical

1. Introduction

OSMF can be correlated with *Mukharoga* described in classics by various Acharya. Some scattered symptoms like inability to open the mouth (Kruchhen Vivrunoti – Vataja Sarvasara), burning sensation in mouth (Daha- Pittaja Sarvasara), pain in mouth (Toda-Vatika Sarvasara), burning of the oral mucosa (Antahkapolamashriyta Shyavpandu– Kapharbuda) are found in *Mukharoga*. On analyzing at the disease condition OSMF can be considered in the Vata Pradhana Tridoshajaa Mukharoga. It is obvious that it needs to be treated at local as well as systemic level Kaya Sirsorivirekam, Vamana, Kavala Dharan, and use of Katu & Tiktdravya and other procedure to remove Kapha and RaktabharaKriya should be done. Kavali Gandusha is the process of holding any medicated liquid like Kwatha, Swarasa, Madhu, Ghrita, Taila, Gomutra, Ushnodakaetc. in the mouth which can be move inside.[2] Acharya Charakahs given importance of TailaGandusha Dharan as it gives strength to jaw bone, voice, facial muscles; helps in developing taste; one will never suffer from dryness of mouth & throat, cracked lips, tooth destruction, toothache, sensitivity of teeth by sour foods & drinks. Thus roots of teeth become strong & one can chew even hard foods easily.[3] There are four types of kavala descried by Acharya Snehika, Prasadana, Shodhana, Ropana.*Nishadi Taila* is[4] mentioned in the context of *Mukharogachikista* by Bhavprakashasa so this Taila preparation has been taken for the study, to analyse the quality of *Nishadi Taila* subjected for Pharmacognostical study of individual components and physico-chemical analysis of *Nishadita*.

2. Materials and Methods

2.1 Collection, Identification and authentication of raw drugs

The raw drugs for the study were procured from the Pharmacy of Gujarat Ayurved University. The ingredients & parts used in the preparation of the final product are listed in the Table 1. The ingredients were identified and authenticated in the Pharmacognosy Laboratory, Institute for Post Graduate Teaching & Research in Ayurveda, Gujarat Ayurved University, Jamnagar.

2.2 Method of Preparation

Drug was prepared in the pharmacy of Gujarat Ayurved University, Jamnagar.

2.3 Pharmacognostical Evaluation of *Nishadita Taila*

**Powder microscopy**

The powders of respective parts of all the ingredients of *Nishadita* studied separately with and without staining covered with cover slip and observed under the Carl Zeiss Trinocular Microscope. The microphotographs were taken by using Carl Zeiss Trinocular attached with camera.[5]

**Organoleptic Study**

The prepared drug *Nishadita* was evaluated by organoleptic characters like colour, taste, odour etc., and was carefully noted down[6]

**Physico-Chemical Analysis of *Nishadita* Taila**

*Nishadita Tailawas analysed by using qualitative and quantitative parameters at Pharmaceutical Chemistry Laboratory, Institute for Post Graduate Teaching &

---

**Volume 8 Issue 9, September 2019**

[www.ijsr.net](http://www.ijsr.net)

Licensed Under Creative Commons Attribution CC BY
Research in Ayurveda, Gujarat Ayurved University, Jamnagar. All Physico-chemical parameters such as acid value, saponification value, iodine value, refractive index, specific gravity were determined.[1]

**High Performance Thin Layer Chromatography (HPTLC)**

Methanol extract of *NishadiTaila* was used for High performance thin layer chromatography (HPTLC) study. Extract of *NishadiTaila* was spotted on pre-coated silica gel GL60254 aluminum plate as 10mm bands by means of a Camag Linomat V sample applicator fitted with a 100μL Hamilton syringe. Toluene: Ethyl acetate: Acetic acid (7:2:1) was used for *NishadiTaila* as a mobile phase. The development time was 30 minutes. After development, Densitometry scanning was performed with a Camag TLC scanner III in reflectance absorbance mode at 254 nm and 366 nm under control of Win CATS software (V1.2.1. Camag). Then the plate was sprayed with Vanillin sulphuric acid followed by heating and then visualized in day light.[8]

### 3. Results

**Pharmacognostical evaluation**

**Powder microscopy**

Powder microscopy of all the ingredients of *NishadiTaila* was studied and microphotographs were placed at respective figures [Plate-1 (Fig. 1-15)].

**Organoleptic parameters**

The colour of *NishadiTaila* is golden yellow, whereas the taste of *NishadiTaila* is astrigent. The odour is characteristic and consistency on touch is liquid and sticky. These are all the organoleptic parameters of *NishadiTaila* the mentioned in Table 2.

### Table 1: Ingredients of *NishadiTaila*

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Name of the Drug</th>
<th>Botanical/Latin Name</th>
<th>Part used</th>
<th>Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Haridra</td>
<td><em>Curcuma Longa</em> Linn.</td>
<td>Rhizome</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Madhuka</td>
<td><em>Glycyrrhiza Glabra</em> Linn.</td>
<td>Root</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Neelotpala</td>
<td><em>NymphaeaNouchali</em></td>
<td>Flower</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>TilaTaila</td>
<td><em>SesamumIndicum</em> Linn.</td>
<td>Oil</td>
<td>16</td>
</tr>
</tbody>
</table>

### Table 2: Organoleptic characters of *NishadiTaila*

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Character</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Color</td>
<td>Yellowish</td>
</tr>
<tr>
<td>2</td>
<td>Odor</td>
<td>Characteristic</td>
</tr>
<tr>
<td>3</td>
<td>Taste</td>
<td><em>Kashaya-Tikta</em></td>
</tr>
<tr>
<td>4</td>
<td>Touch</td>
<td>Liquid, sticky</td>
</tr>
</tbody>
</table>

### Table 3: Physico-chemical parameters of *NishadiTaila*

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Test</th>
<th>Sample Results % W/W</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acid value</td>
<td>10.1</td>
</tr>
<tr>
<td>2</td>
<td>Refractive index</td>
<td>1.4910</td>
</tr>
<tr>
<td>3</td>
<td>Saponification value</td>
<td>182.41</td>
</tr>
<tr>
<td>4</td>
<td>Iodine value</td>
<td>90.69</td>
</tr>
<tr>
<td>5</td>
<td>Specific Gravity</td>
<td>0.065</td>
</tr>
</tbody>
</table>

### Table 4: Rf values of *NishadiTaila*

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>UV light</th>
<th>No. of Spots</th>
<th>Max. Rf values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Short (254 nm)</td>
<td>05</td>
<td>0.00, 0.04, 0.31, 0.57, 0.72</td>
</tr>
<tr>
<td>2</td>
<td>Long (366 nm)</td>
<td>03</td>
<td>0.0, 0.85, 0.92</td>
</tr>
</tbody>
</table>

**Figure 1:** Scleroids of *tastrmodhu*  
**Figure 2:** Crystal fibres of *tastrmodhu*  
**Figure 3:** Stone cells of *tastrmodhu*
Plate 2 (Fig. 1-2) Densitogram of Nishadi Taila at 254nm and 366nm
Plate 3 (Fig. a,b,c) Three dimensional (3D) Densitogram at (a) 254nm (b) 366nm (c) Specific Comparator Graph
4. Discussion

Pharmacognostical evaluation showed that the NishadiTaila contains all the ingredients which were observed in the microscopically characters, this shows that the purity and quality of the product. Phytochemical analysis showed that material gains no moisture during storage, so quality of the product is not affected. All Physico-chemical parameters of NishadiTaila are normal in limit and shows the product is of good quality and better results in the diseases. HPTLC results showed that the 5 spots at 254 nm and 3 spot at 366 nm.

5. Conclusion

Pharmaogonostical and phytochemical evaluation of NishadiTaila illustrated the specific characters of all ingredients which are used in the preparation. The endosperm fragment, oil globule, cotyledon surface, rosette crystal, simple fibre, prismatic crystal, lignified branched trichome, pollen grain, simple trichome, stone cell, parenchyma cell are observed in the ingredients. All the physico-chemical parameters like acid value, saponification value, iodine value, refractive index, specific gravity analysed were within the normal range. All the results showed the quality of the preparation is standard. On the basis of observations made and results of experimental studies, this study may be beneficial for future researchers and can be used as a reference standard in the further quality control researches.

References


[2] Sushruta-Sushruta Samhita with AyurvedarahasayadipikaVyakhya by Dr.Ghanekar, Nidansthana 16 Mukharoganidaniyam /65,66; Ed. MeharchandaLachhamandas Publication, Delhi,1998; page no 107


