Analytical study of Nirgundayadi taila an ayurvedic formulation

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Abstract

‘In Ayurveda, medicated oils are used for mainly in diseases which are due to the vata dosh dushti. Nirgundayadi taila is an ayurvedic formulation mentioned in Yog Ratnakar in the management of karnaroga. The main contents of this taila are Nirgundi, Jaati, Arka, Rasona, Bhringraj, Karpasa, Sahijana, Tulsi, Aadraka, Karvellaka, vatsnabh a and tila taila. It contains predominantly vatakaphdoshshamak dravyas; it is prepared by classical method of taila paka Kalpana according to the ayurvedic pharmacopoeia of India with standard operative procedure which is described for oil preparation.

Aim: To prepare and do the physio chemical study of finished product.

Key words- Nirgundayadi, Taila, Karnanada, karnaroga

INTRODUCTION

Ayurveda is the integral and the most ancient form of medical stream related to the wholesome cure of ailments by the natural remedies in the form of both herbal formulations and purificatory procedures. In Ayurveda a person is known healthy when his/her all dosha, dhatu, malas all are in normal state¹.

Nirgundayadi taila is an ayurvedic medicated preparation which is mentioned for karnpoorana therapy in karnaroga. Karnanada is one among karnarogas described by various acharyas. The sign and symptoms of karnanada have similarity with tinnitus. Taila is a medicated formulations of various doshshamak drugs according to respective diseases which alleviates vatadosh does not aggravate kapha². During the snehapaka procedure taila have a specific property to assimilate the properties of added drugs and maintains its own properties³. In present study Nirgundayadi Taila is taken for the management of karnanada.

Table 1 compositions of Nirgundayadi taila.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Drug</th>
<th>Latin name</th>
<th>Family</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nirgundi</td>
<td>Vitex nirgundo</td>
<td>Verbenaceae</td>
<td>500gm</td>
</tr>
<tr>
<td>2.</td>
<td>Jaati</td>
<td>Jasminum officinale</td>
<td>Oleaceae</td>
<td>500gm</td>
</tr>
</tbody>
</table>
3. Arka  
   *Calotropis procera*  
   Asclepiadaceae  
   500gm

4. Bhringraj  
   *Eclipta alba*  
   Compositae  
   500gm

5. Rasona  
   *Allium sativum*  
   Liliaceae  
   250gm

6. Karpasa  
   *Gossypium herbaccum*  
   Malvaceae  
   500gm

7. Sahijana  
   *Moringa oleifera*  
   Moringaceae  
   500gm

8. Tulsi  
   *Ocimum sanctum*  
   Labiatae  
   500gm

9. Aadraka  
   *Zinziber officinale*  
   Zinziberaceae  
   250gm

10. Karvellaka  
   *Momordica charantia*  
   Cucurbitaceae  
   250gm

11. Vatsnabha  
   *Aconitum ferox*  
   Ranunculaceae  
   250gm

12. Tila taila  
   *Sesamum indicum*  
   Pedaliaceae  
   5 ltr

**Material and methods:**

**Collection of Raw Materials:**

The raw drugs for the study were procured from the Herbal Automation Kankhal, Haridwar, Uttarakhand. The final product that is *Nirgundayadi Taila* was prepared in Anamika Pharmacy, Sidkul, Haridwar, Uttarakhand. The ingredients were identified by PG Department of Dravyaguna, Rishikul Campus, Haridwar.

**Method of preparation of Nirgundayadi taila:**

The *Nirgundayadi taila* was prepared as per standard operative procedures of the ayurvedic pharmacopeia of India for oil preparation. For the preparation of *Nirgundayadi taila* 5ltr *tila taila* was taken and the raw drugs *Nirgundi, Jaati, Arka, Bhringraj, Karpasa, Sahijana, Tulsi* were taken in equal amount each one part which was 500gm and *Rasona, Aadraka, Karvellaka, vatsnabha*, each 250gm taken in fresh and dry form as per availability. All the content drugs are shown in figure and tabulated (table 1).

*Nirgundi, Jaati, Arka, Bhringraj, Karpasa, Sahijana and Tulsi* were taken as fresh form and mixed with 8 times of water and boiled for decoction in regulated temperature till it became one fourth of water and filtered with muslin cloth. *Rasona, Aadraka, Karvellaka, vatsnabha*, these drugs were crushed in form of *kalka* (paste). After these 5ltr *tila taila* was taken in medium size vessel and the decoction and *kalka* were mixed in it and oil was heated till the water contents of oil evaporated. Heating was stopped when *varti* of *kalka dravyas* was formed and other *taila paka* examination was done. Taila was filtered while hot through a muslin cloth and allowed to cool after that the *taila* was packed tightly.

**Analytical study**

Prepared final product i.e. *Nirgundayadi taila* was analysed by employing various analytical parameters.

**Organoleptic study**

Organoleptic characteristics like color, appearance of *Nirgundayadi taila* were observed.
Physiochemical analysis

Table 2. Organoleptic parameters of *Nirgundayadi taila*

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Colour</td>
<td>Light yellowish</td>
</tr>
<tr>
<td>2.</td>
<td>Appearance</td>
<td>Oily Liquid</td>
</tr>
<tr>
<td>3.</td>
<td>Weight/ml at 40°C</td>
<td>0.9168</td>
</tr>
<tr>
<td>4.</td>
<td>Refractive index at 40°C</td>
<td>1.4716</td>
</tr>
<tr>
<td>5.</td>
<td>Peroxide value</td>
<td>2.10</td>
</tr>
<tr>
<td>6.</td>
<td>Iodine value</td>
<td>118.16</td>
</tr>
<tr>
<td>7.</td>
<td>Saponification value</td>
<td>202.94</td>
</tr>
<tr>
<td>8.</td>
<td>Mineral oil</td>
<td>Absent</td>
</tr>
</tbody>
</table>

Table 3. Pharmaceutical and analytical results

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Test</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total bacterial count (cfu/g)</td>
<td>&lt;10</td>
</tr>
<tr>
<td>2</td>
<td>Yeast and mould count (cfu/g)</td>
<td>&lt;10</td>
</tr>
<tr>
<td>3</td>
<td>E. coli</td>
<td>Absent</td>
</tr>
<tr>
<td>4</td>
<td>S. aureus</td>
<td>Absent</td>
</tr>
<tr>
<td>5</td>
<td>P. aeruginosa</td>
<td>Absent</td>
</tr>
<tr>
<td>6</td>
<td>Salmonella sp.</td>
<td>Absent</td>
</tr>
</tbody>
</table>

**TLC Profile**

About 100ml oil measured and transferred to a 250ml capacity separating funnel and added 50ml of methanol. Shaked slowly for about 3-5 minutes taking precautions that no emulsion formation should take place. Stand for 10-15 minutes so that both layers are separated out. Collected the methanolic layer and evaporated the methanol.

**Mobile phase**: chloroform:methanol(90:10)

Procedure: Applied 10µl and 8µl of each of standard and sample preparation on the TLC plate at lower side, 5mm above the edge of plate. Developed the plate in 10×10cm twin through glass chamber containing mobile phase and pre saturated for about 10min to 9cm.

**Spraying reagent**: Methanol:Glacial Acetic Acid:Anisaldehyde:Sulphuric acid (85:10:0.5:5).

**Discussion**

*Nirgundayadi taila* is explained in *Yogratnakar* under *karna roga chikisa adhyaya* for *karnapoorana*. Detailed method of preparation of *Nirgundayadi taila* is not available. For optimum therapeutic efficacy *Nirgundayadi taila* was prepared according to the *Ayurvedic Pharmacopoeia* of India and highest level of hygiene was maintained in all processes till the manufacturing and packaging of finished product was completed in 50ml sterile bottles. *Nirgundayadi taila* is prepared by *til taila* and eleven other drugs which are predominantly *vata* and *kapha shamaka*. The obtained values of all tests are found within normal limits which indicate good quality of prepared oil.

**Conclusion**

*Nirgundayadi taila* is a herbal formulation contains the drugs having properties such as *mastishk baldayak*, *balya*, *rasayana*, *naadi santhan baldayaka*, *karna rognashaka*, *kapha vaata shamaka*. All the
test parameters and bacterial counts (table 2&3) as per API were found within normal limit in prepared Nirgundayadi oil.

References

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