Physico-chemical and Phyto-chemical standardization of Pind Taila

Sonali Patil and Shruti Shah

Abstract
Standardization of drug means confirmation of its identity and determination of its quality and purity and detection of nature of adulterant by various parameters like morphological, microscopical, physical, chemical and biological observations. The present study involved standardization of Pind Taila. The present standardization study reveals organoleptic characteristics, phyto-chemical analysis and physic-chemical analysis. The application of present study may play significant role in deciding the identity, purity, quality of the Pind Taila formulation and also for fixing standards for this Ayurvedic formulation.

Keywords: Pind Taila, AYUSH, Physico-chemical, Phyto-chemical, quality control

Introduction
Ayurveda is the most primary Indian systems of medicines. In order to market these products on a commercial basis it is important to maintain quality controls and standardize them based on international guidelines. For these reasons we need to refer to the guidelines and methods in Ayurvedic pharmacopoeia of India, Ayurvedic formulary of India etc.

In the present study, The Ayurvedic formulation Pind Taila was prepared as per the guidelines of department of AYUSH. The Department is responsible for designing, formulating and implementing policy for promoting and propagating the Indian systems of Medicines.

Pind Taila is a classical ayurvedic topical medicine which helps in relieving inflammation as in Vatta rakta (Gout). Pind Taila is a medicated oil used in Ayurvedic system of Medicine for Vaatharaka. The ingredients used in Pind Taila are Rubia cordifolia (useful for skin treatment such as acne, burns or eczema), Hemidesmus indicus (diuretic and a blood purifier), Risina flena (highly effective in treatment of burns), Glycyrrhiza glabra (heals respiratory tract disorders) and wax. Castor oil was used as the base.

The standardization was carried out using various pharmacognostic tools like acid value determination and saponification value determination, phytochemical analysis, macroscopic analysis etc.

Materials and methods
Preparation of Pind Taila
All the ingredients were crushed. Required quantity of water was added and kept for soaking for 1 hour. It was then boiled and reduced to half volume. The mixture was filtered with muslin cloth. Castor oil (500 ml) was added into extract. Again it was boiled till water gets evaporated.

Test for completion of procedure: Take a cotton plug and dip it in formulation, if it burns properly without making cracking noise then formulation is complete.

Storage and preservation
It was preserved in dried, airtight, fungus free clean glass or china clay container.

Organoleptic characteristics
The finished product was analyzed for its organoleptic properties like Color, Odor and texture.
Microscopic Analysis
The microscopic Character of each ingredient and final product were carried out. Permanent slides were prepared and stained with Safronin (1%) + Glycerin (Selvakumar et al., 2010) [9].

Physico-chemical analysis
Acid value, Peroxide value and saponification value was determined (Trease and Evans Wc., 1989) [11].

Phyto-chemical Analysis
Preliminary tests were carried out on methanolic extract for the presence / absence of phyto-constituents like Cardiac glycosides, Phlobatanninx, flavanoids and tannins (Sazada et al., 2009) [8].

Result and Discussion
Organoleptic parameters revealed that brownish Greyish in color, odorless with oily texture (Table 1). Microscopic analysis of sample showed the presence of identifying diagnostic characters, which are not overlapping.

It shows presence of xylem thickening, Cork cells, xylem vessels, sclerides (Fig. 1). Phytochemical analysis showed presence of glycosides, Phlobatanninx, flavanoids and tannins (Table 2).

Table 1: Organoleptic Characteristics Pind Taila

<table>
<thead>
<tr>
<th>Organoleptic characteristics</th>
<th>Formulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Brown</td>
</tr>
<tr>
<td>Texture</td>
<td>Oily</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
</tbody>
</table>

Table 2: Phyto-Chemical Test

<table>
<thead>
<tr>
<th>No.</th>
<th>Tests</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cardiac glycosides.</td>
<td>P P A</td>
</tr>
<tr>
<td>2</td>
<td>Phlobatanninx</td>
<td>P A A P</td>
</tr>
<tr>
<td>3</td>
<td>Flavonoids.</td>
<td>P P A P</td>
</tr>
<tr>
<td>4</td>
<td>Tannins</td>
<td>P P A P</td>
</tr>
</tbody>
</table>

Key: P – Present, A- Absent
1. Manjishshtha
2. Sariva
3. Ral
4. Yahthimadh
5. Pind Taila

Table 3: Acid Value

<table>
<thead>
<tr>
<th>Name Of Formulation</th>
<th>B.R (A) For Sample</th>
<th>Weight Taken</th>
<th>Result (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pind Taila</td>
<td>1.3 ml</td>
<td>1 gm</td>
<td>7.28 %</td>
</tr>
</tbody>
</table>

Table 4: Saponification Value

<table>
<thead>
<tr>
<th>Name Of Formulation</th>
<th>B.R (A) For Sample</th>
<th>Result (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pind Tail</td>
<td>38.5 ml</td>
<td>78.37</td>
</tr>
</tbody>
</table>

Conclusion
Standardization is maintaining the same physicochemical properties and quality of a product or formulation throughout the process of preparation and utilization leading to identical therapeutic efficacy an all batches. The standardization of Pind Taila was carried out using various pharmacognostic tools. Quality control tests were done to analyse the raw material as well as formulation. Powder
microscopy for raw materials was performed during and later-on in the process of preparation of ASU formulation. Tests like phyto-chemical test and physico-chemical tests were performed. The same protocol may be applied for as a regular development of drug, its quality control and standardization for polyherbal formulations. Further studies are required to determine its mechanism of action and in vivo studies.

References
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