

STANDARDISATION OF THE AYURVEDIC MEDICINE PINDATAILA

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ABSTRACT: Pinda Taila is a medicated oil used Ayurveda for vaatharakta, the aim of the present study is to fix physicochemical standards for the above Taila. Though the analytical values can be as preliminary reference standards, these values are mostly related to the purity of the sesame oil, the thin layer chromatography (TLC) studies of the Taila are more useful to detect the presence of single drugs present in panda Taila.

Introduction:

Standardisation of Ayurvedic drugs is an indispensable part in Indian system of medicines it is inevitable for universal acceptance, though this ancient system has established clinical effects, there is no scientifically accepted method to ascertain the standard, purity and exact nature of finished product and single drugs used therein.

The aim of the present study was to fix physico-chemical standards for panda Taila. Pinda Taila is a medicated oil used in Ayurvedic system of Medicine for Vaatharakta. The drugs used in Pinda Taila are Rubia cordifolia, Hemidesmus indicus, Vateria indica and Bess wax.

From standardization point of view, the analytical values of panda Taila can be used as preliminary reference standards for market samples of the above Taila. Since these values are mostly related to the purity of the sesame oil, the thin layer chromatography (TLC) studies of the Taila is considered more useful to find the presence

of the various chemical compounds of the plants used in the Taila.

Materials and Methods:

Pharmacognostically pure and authentic ingredients were used in the preparation of panda Taila. Pinda Taila was prepared using the following three medicinal plants:-

1. Rubia cordifolia
2. Hemidesmus indicus and
3. Vateria indica

The method consists of four procedures, viz

1. The preparation of a standard sample of pinda Taila as per the Pharmacy pharmacopoeia in the Ayurveda College, Thiruvananthapuram. The samples were prepared under the supervision of Dr. S. Vijayalakshmi, Research officer (Ayurveda) of our unit. The details of the ingredients of "Pinda Taila" are given in Table I.
2. Recording preliminary parameters like colour, smell, appearance specific gravity, ash content, loss on

drying iodine value, specification value and acid value, the result are given in Table II.

3. T.L.C studies of pinda Taila, and individual Taila of the three medicinal plants used in Pinda Taila were carried out using different solvent systems, and the results are given in Table III.

The layer chromatographic study was carried out using silica gel G Plates activated at 100o for 40min. The solvents used are given in table III. The plates were viewed in a U.V lamp with radiation aperture 140nm; (Emission 300 nm and range 3200-4000 AU).

The spraying reagent used was acetic anhydride-sulphuric acid (Liebermann Burchard

Table –I
Ingredients of Pinda Taila

S.No	Name of Ingredients	Sanskrit Name	Malayalam Name	Part used	Qty.
1.	Rubia cordifolia	Manjistha	Manjitti	Root	120gm
2.	Hemidesmus indicus	Sariba	Narunindi	Root	120gm
3.	Vateria indica	Ajakarna	Vellakunturukkum	Resin	30gm
4.	Bees wax	Madhu Uchista	Ponmezhuku	Wax	30gm
5.	Sesame oil	Tila Taila		Oil	1ltr

Table –II
Analytical values of Pinda Taila

S. No	Parameter	Pinda Taila
1.	Colour	Reddish brown
2.	Smell	Fragrant
3.	Ash value (W/W)%	0.1307
4.	Acid value (mg/gm)%	1.270
5.	Saponification value (mg/gm)%	173.2
6.	Unsaponifiable matter (W/W)%	3.631
7.	Iodine Value (gm/100gm)	103.9
8.	Loss on drying at 110oC (W/W)%	0.1143
9.	Specific gravity at room temp	0.92

Table – III
TLC Studies of Pinda Taila

Solvent system	Pinda Taila Rf value	Rubia cordifolia Taila Rf value	Hemidus indicus Taila Rf value	Vateria indica Taila Rf value
Chloroform	0.46	0.46	0.53	
Benzene	0.53			
Acetic acid	0.62	0.62		
80:15:25				
Toluene	0.17	0.17	0.26	
Acetone	0.26			
Acetic acid	0.34	0.34		
90:10:0.5	0.71	0.73		
Benzene	0.057			0.057
Ethyl	0.14			
Acetate	0.21			
80:20	0.27			

Reagent): 5ml acetic anhydride is carefully mixed under cooling with 5ml conc. Sulphuric acid; this mixture is added cautiously to 50 ml absolute ethanol with cooling. It is freshly prepared before use.

Results and Discussion:

The Analytical values of Pinda Taila are presented in Table II. These can be used as a reference standard for screening market samples also since these values are mostly related to the purity of the sesame oil the thin layer chromatography was done to detect the presence of each single drug constituent that enters the finished product. Therefore, the TLC profile of panda Taila and each single drug Tailas such as Rubia cordifolia Taila, Hemidesmus indicus Taila and vateria indica taila were studied after dissolving the Tailas in petroleum ether.

The TLC pattern obtained in the solvent system chloroform: Benzene: Acetic acid (80: 15:2.5) is presented in Table III. The two spots with Rf value 0.46 and 0.62

obtained for the Taila with Rubia cordifolia alone was also present in the TLC pattern of Pinda Taila. Therefore the presence of Rubia cordifolia in Pinda Taila can be confirmed by the two spots with characteristic Rf values 0.46 and 0.62 which were visible to naked eye. Both the spots were reddish brown in colour and the colour of these spots darkened when exposed to ammonia vapour. In Pinda Taila in addition to these spots there was another spot with Rf value 0.53 which had a blue florescence in UV. The same spot with same Rf value was obtained in the Taila prepared with Hemidesmus indicus alone, hence the presence of Hemidesmus indicus also can be detected by this spot obtained in this solvent system.

The table III also presents the TLC pattern of the Tailas in another solvent system. Toluene: Acetone: Acetic acid (90:10:0.5). The resolution in this system was than that in the previous system and hence 4 spot with Rf value 0.17, 0.26, 0.34 and 0.71 were obtained in panda Taila. Out of these four

spots three spots with Rf value 0.17 (Reddish brown) 0.34 (Reddish brown) and 0.73 (Orange) were obtained in the TLC pattern of *Rubia cordifolia* taila and all the there spots were visible in naked eye. The fourth spot with Rf value 0.26 obtained in Pinda Taila which was having a blue fluorescence in U.V was obtained in *Hemidesmus indicus* taila. Therefore this system can also be used for detecting the presence of *Rubia cordifolia* and *hemidesmus indicus* in the panda Tila and system is useful as it is having a better resolution.

In order to detect the presence of *vateria indica* the above discussed solvent systems failed as the Taila prepared using *vateria indica* alone did not resolve in the above said solvent systems, But the resolution of the *vateria indica* taila was obtained in another solvent system-Benzene: Ethyl acetate (80:20) with spraying reagent-Liebermann-Burchard reagent. The TLC pattern obtained for pinda Taila and *vateria indica* Taila are presented in Table III. The three spots with Rf values 0.05, 0.14 and 0.21 were obtained in both Tailas and in Pinda Taila an extra spot with Rf value 0.27 was obtained. Hence this TLC pattern can be used to detect the presence of *vateria indica* in pinda Taila.

The above results clearly show that the detection of single drug ingredient present in Pinda Taila is possible with the TLC study of the Taila in various solvent systems. In the finished products of plants, according to current knowledge and possibilities, no completed analytical investigation can be carried out¹ for standardisation purpose the identification of each and every spot revealed by TLC may not be necessary. Rather a comparison of the overall TLC patterns should suffice and the range of variability for final standards could be fixed by inter-laboratory collaborative standards^{2,3}.

The isolation and identification of each chemical component present in the drugs and its detection in finished products is tedious and time consuming. Moreover even if it is identified it cannot be carried out in an ordinary laboratory. Where drug testing is usually done. Hence we suggest that the above methods are sufficient to detect the presence of the single drug ingredients in the finished product. The quantitative estimation of each single drug ingredient present in pinda Taila requires further research work.

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