STANDARDISATION OF THALEESAPATRADI CHOORNAM

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ABSTRACT: Standardisation of Ayurvedic medicines has become necessary to keep up their therapeutic efficacy. This paper deals with the standardization of Thaleesapatradi Choornam, a compound preparation of six drugs along with sugar. Chromatographic technique was used for the detection of the ingredients. Different solvent systems were developed for each ingredient, and spots obtained were visualized in iodine vapours. The presence of spots with identical value in the single drug and finished product indicate the presence of constituents of single drugs in finished product which in turn conforms its presence. These parameters can be considered viable for this preparation.

INTRODUCTION

Ayurveda is a system of medicine that extends beyond mere diagnosis and therapy of disease; it encompasses prevention of illness and describes a way to lead a healthy life. In ancient times the medicines were prepared by the physician himself. This practice of individual physician identifying drugs and preparing the medicine himself has been largely supplanted by pharmaceutical industry. The chronic shortage of authentic raw materials due to wanton deforestation and increasing urbanization, tendency of patients to purchase readymade preparations etc. resulted in the deterioration of the quality of medicines. This makes the medicine not only ineffective but sometimes renders it harmful to health also. The available data of the drugs will not help to ascertain the presence of adulterants, omission of costly or rare drugs. This necessitates the need for standardization to ensure the quality of medicines and to give protection to manufactures of ethical ayurvedic drugs, prescribing physicians and consumer. This will in turn help to regain its pristine glory.

Thaleesapatradi Choornam is a popular preparation of seven ingredients used for Kasa, Swarasadam, Swaravikara, aruchi etc. It consists of Thaleesapatra (Abies webbiana) pepper (Piper nigrum), Chukku (Zingiber officinale) Thippali (Piper longum) Elangarngam (Cinnamomum zeylanicum), Cardamomum (Elettaria cardomomum) and sugar. In the present paper an attempt has been made to chemically standardize the Choornam and to identify the presence of each ingredient.
MATERIALS AND METHODS

The ingredients were procured from the local raw drug trader and botanically identified. Choornam was prepared in this unit under the supervision of an expert according to procedure in Sahasrayoga. The physico chemical characteristics of the Choorna (Table – I) like organoleptic properties, loss on drying at 110°C, ash content, acid insoluble ash, water insoluble ash, etc. were determined according to standard methods.

For comparative studies the following preparations were also made using five ingredients and omitting one in each case. Alcohol soluble extractives of Choornam and other samples prepared were taken.

The steam volatiles of the finished product and other preparations were also taken. Chromatographic method was used for the identification of the ingredients. T.L.C studies were done using silica gel G plates. A number of solvent systems were tried and those which gave best resolution were selected. Iodine vapour was used for detection.

RESULT AND DISCUSSION

The presence of piperine, a major alkaloid of *Piper nigrum*, was detected in Thaleesapatradi Choornam using the solvent system toluene – ethylacetate 7 : 3. Though the detection of piperine is also a constituent of another ingredient *Piper longum*. Hence other parameters had to be evolved to detect *Piper longum* in the presence of *Piper nigrum* and vice versa. Results are given in Table II.

In the solvent system benzene – ethylacetate 9 : 1 both *Piper longum* and *Piper nigrum* gave the spot of piperine Rf : 0.35. But *Piper longum* gave two more spots were present in the steam distillate of Thaleesapatradi Choornam thereby indicating the presence of *Piper longum* in the Choornam. This is further confirmed by the fact that two additional spots of *Piper longum* were absent in the Choornam prepared without Thippali.

To identify the *Piper nigrum* in the presence of *Piper longum*, other solvent systems were tried. In the system, benzene – pet ether – ethyl alcohol 5:5:0.2. Pepper gives a spot of Rf : 0.36 in addition to common spots present in both in Thippali and pepper. This can be considered as a parameter as this spot given by alcohol extract of pepper and steam distillate of Thaleespatradi Choornam was absent in the Choornam prepared omitting pepper.

*Thaleespatra* in the Choornam was detected using the solvent system Benzene – Choloroform 3:2, and Choloroform – methanol – benzene 5:4:1. Single spot obtained for the alcoholic extract of Thaleespatra was present in the alcohol extract of *Thaleespatradi Choornam* but was missing in the Choornam prepared omitting Thaleespatra.

Similarly, the solvent system developed for the other three ingredients viz. *Chukku*, *Cardamom* and *Elavarnagam* are as follows:

**Chukku**
- 1. Cyclohexane:
  - Ethyl acetate 7:3
- 2. Pet ether:
  - Acetone 8:2

**Elavarnagam**
- 1. Chloroform:
  - Methanol 4:1
- 2. Benzene:
  - ethyl acetate 4:1
Cardamom

1. Cyclohexane:
   ethyl acetate 4:1
2. Toluene:
   Methanol 35:15

Results are given in Table III. In each case the spots obtained for the single was present in the finished product but was missing in the Choornam prepared without the concerned drugs. Thus these spots can be considered characteristic of the particular single drug and their presence confirms the presence of the drug in the finished product.

CONCLUSION

The parameters evolved above can be considered as viable for prescribing dependable standards for this preparation. Though more decisive parameters can be obtained by the application of sophisticated instruments, following the dictum that the standard prescribed should be a standard followed easily, the parameters presented in this paper would serve the purpose of reasonable and dependable standard for this preparation.

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TABLE I

Physicochemical Characters of *Thaleesapatradi Choornam* Organoleptic properties

| Character                  | Value       |
|----------------------------|-------------|
| Colour                     | Greyish White |
| Odour                      | Aromatic    |
| Taste                      | Sweet and Pungent |
| Touch                      | Moderately fine powder |
| Less on drying at 110°C    | 5.3         |
| Ash Content %              | 2.53        |
| Water insoluble ash %      | 1.538       |
| Acid insoluble ash %       | 0.590       |

TABLE II

Detection of *Piper nigrum* in the presence of *Piper longum* and vice versa

| Solvent System          | Piperine Rf | Alcoholic extract of pepper Rf | Thaleesapatradi Choornam Rf | Choornam without pepper Rf | Choornam without Thippali Rf | Alcoholic extract of Thippali Rf |
|-------------------------|-------------|--------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------------|
| Toulene Ethylacetate 7:3| .619        | .619                           | .619+                       | .619+                       | .619+                       | .619+                            |
| Benzene Ethylacetate 9:1| .35         | .35                            | .35++                       | .35++                       | .35++                       | .35++                            |
| Pet ether* Benzene Ethanol 5:5:0.2 | .36 | .36                            | .36+++                      | Nil+++                      | .36+++                      | Nil                             |

* Common spots obtained were not obtained
+ Alcoholic extract
++ Steam Volatiles
+++ Benzene extract
TABLE III

| Alcohol Ext. of the samples | *Abies webbiana* | *Zingiber officinale* | *Cinnamomum zeylaca* | *Elattaria cardamomum* |
|-----------------------------|------------------|-----------------------|----------------------|------------------------|
|                             | Benzene: Chloroform 3:2 | Chloroform Methanol Benzene 5:4:1 | Cyclohexane: Ethyl acetate 7:3 | Pet ether Acetone 8:2 | Chloroform Methanol 4:1 | Benzene Et.acetate 4:1 | Cyclo hexane 4:1 | Tolune Methanol 35:15 |
| No. of Spots | Rf    | No. of Spots | Rf    | No. of Spots | Rf    | No. of Spots | Rf    | No. of Spots | Rf    | No. of Spots | Rf    |
| Concerned Drug Alone | 1 | .389 | 1 | .55 | 2 | .52 | 1 | .425 | 1 | .417 | 1 | .7 |
| Thaleesa* pathradi choornam | 1 | .389 | 1 | .55 | 2 | .52 | 1 | .425 | 1 | .417 | 1 | .7 |
| Choornam prepared without the concerned drug | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil |

* Only the characteristic spots of the concerned drug alone taken into consideration
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