STUDIES ON THE STANDARDISATION OF MAHALAKSADI TAILA

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ABSTRACT: Malaksadi taila was prepared as per Ayurvedic formulary and was analysed. The specific gravity, saponification number, iodine number and acid number were 0.915, 199, 102 and 2 respectively. The drug resolved into two spots in the solvent n-butanol, acetic acid, water (75:15:10). The visible spectrum showed two peaks at 420-30 nm and 660 nm.

INTRODUCTION

Tailas are medicated oils forming a group of drugs in Ayurvedic system of medicine. The principle is to extract the therapeutic compounds into oil. The method of preparation requires heating of oil with prescribed kashayas (decoction) and Kalkas (powdered drugs) according to formula. The tailas have the colour, odour and taste of the drugs used, and also have the consistency of the oil. Generally they are used for abhyanga (external application). Some of them are also used internally with anupanas.

Mahalaksadi taila was prepared and analysed. It is prescribed in sarvajvara (all types of fever).

MATERIALS AND METHODS

The formula and method of preparation was same as described in ayurvedic formulary part II, Central Council for Research in Ayurveda and Siddha, New Delhi.

Preparation of Mahalaksadi taila

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Studies on laksarasa

The laksarasa was prepared by suspending 3 kg of stick lac packed in a cloth in 12 litres of water. The water was boiled and reduced to 3 litres. The extract was used as laksarasa.

The pH, solid contents and specific gravity were determined in laksarasa and in water extract of stick lac. When laksarasa started boiling it was designated as water extract.

Analytical methods

pH was determined on Elico digital pH meter. Specific gravity, total solid content, saponification number, iodine and acid numbers were determined as reported earlier (Alam et al. 1981).
Chromatography

Thin layer silica gel chromatography was carried out in the following solvents (Stahl, 1969).

1. Butanol: Pyridine: Water ::50:12:5:37.5
2. Ethylacetate: Methanol: Water ::100:16:5:13.5
3. n-Butanol : acetic acid : Water ::63:27:10
4. n-Butanol : acetic acid : Water :: 75:15:10

Mahalaksadi taila was dissolved in chloroform and was spotted along with laksarasa. The chromatograms were developed with iodine vapours and sulphuric acid. The sulphuric acid sprayed plates were heated at 110°C for 10 minutes in hot air oven.

Specturm

Mahalaksadi taila and gingelly oil were diluted 1:10 (V/V) in chloroform. The visible spectrum was recorded on Bausch & lamb spectronic 21 spectrophotometer against chloroform as blank.

Results

The laksarasa was red in colour. The analytical values of water extract of stick lac and laksarasa are summarized in Table 1. The total solid contents in the total volume of laksarasa were less compared to the solids in total volume of water extract.

The colour of mahalaksadi taila was yellowish brown. The specific gravity, saponification number, iodine number and acid number are shown in Table 2. These values are comparable to the values of gingelly oil (Garrat 1964).

The thin layer chromatography of mahalaksadi taila showed two spots which were positive to iodine and sulphuric acid. One of the spots of Rf 0.84 was also present in laksarasa but it did not develop any colour with iodine vapours but with sulphuric acid developed pink colour. The chromatogram of mahalaksadi taila developed grey colour with sulphuric acid and was also positive to iodine vapours. The compound(s) of laksarasa of Rf 0.84 was probably different from mahalaksadi taila. (Table 3).

Mahalaksadi taila showed maximum absorption at 420-430nm. There was a gradual decrease in optical density with the increase in wave length. There was another peak at 660 nm (Fig.1) A better information can be obtained with ultra violet spectrum.

| TABLE 1: Analytical values of stick lac water extract and laksarasa |
|-----------------|-----------------|------------------|
| PARAMETER       | Water extract   | Laksarasa        |
| pH              | 6.90            | 5.37             |
| Specific gravity| 1.001           | 1.003            |
| Total solid content % (W/W) | 0.189 | 0.468 |
| Solid content in total volume% (W/V) | 23.69 | 14.08 |

| TABLE 2: Analytical values of Mahalaksadi taila |
|-----------------|----------------|
| PARAMETER       | Value          |
| Specific gravity| 0.915          |
| Saponification number | 199  |
| Iodine number   | 102            |
| Acid number     | 2.0            |
TABLE 3: Thin layer chromatography of Mahalaksadi taila and laksarasa

|                  | Iodine          | Sulphuric acid              |
|------------------|-----------------|-----------------------------|
|                  | Rf  | Colour | Rf  | Colour | Remarks                              |
| Lak sarasa       | ---  | --     | 0.84 | Pink   | Sulphuric acid positive spots were faint |
|                  | 0.75 | Light yellow | 0.75 | Brown  |                                      |
|                  | 0.67 | Light yellow | 0.67 | Brown  |                                      |
|                  | ---- | ----- | 0.43 | Brown  |                                      |
| Mahalaksadi taila| 0.98 | Dark Yellow | 0.98 | Grey   |                                      |
|                  | Dark Yellow | 0.84 | Grey |            |                                      |

Discussion

The process of heating resulted in the loss of total solid content in the laksarasa. This may be either due to insolubility of the compounds in the present volume of water of destruction due to heat. The mahalaksadi taila showed different colour spots compared to laksarasa. The extraction of compounds into oil from reduced kashayam was either nil or in micro quantity. The literature on stick lac shows the presence of 80% resin and sugar, protein, soluble salts, colouring matter and traces of volatile oil (Anonymous 1976).

Among the tested solvents for thin layer chromatography best result was obtained in the solvent n-butanol: acetic acid: Water (75:15:10)

The pharmacopoeal parameters were not enough to characterize mahalaksadi taila because analytical values were comparable to gingelly oil. The spectral and chromatographic parameters can be considered for characterizing mahalaksadi taila.

Conclusion

The thin layer chromatography and spectral studies are useful parameters to standardize mahalaksadi taila. They can be considered along with pharmacopoeal parameters.

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