STANDARDISATION OF MURIVENNA AND HEMAJEEVANTI TAILA

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ABSTRACT: ‘Murivenna’ and ‘Hemajeevanti Taila’ were prepared and their analytical values were reported for standardization. Thin layer chromatography was also done.

INTRODUCTION

Murivenna is medicated oil used in Ayurvedic System of Medicine for contusions, fresh wounds and even for fractures. Ayurvedic Physicians have found Hemajeevanti Taila to be equally effective as Murivenna.

The aim of the present study was to find out whether there is any chemical similarity between Murivenna and Hemajeevanti Taila and to fix physiochemical standards for these two tailas. Thin layer chromatography was also done to fix standards for the above tailas.

MATERIALS AND METHODS

Botanically and Pharmacognostically pure and authentic ingredients were used in the preparation of Murivenna and Hemajeevanti Taila. Murivenna is prepared using the following eight medicinal plants:-

1. Pongamia glabra, 2. Aloe vera, 3. Piper betle, 4. Erythrina indica 5. Allium cepa 6. Moringa Oleifera 7. Borreria hispida and 8. Asparagus racemosus whereas Hemajeevanti Taila was prepared using a single plant Wattakaka volubilis.

The method consists of four procedures viz.,

1. The preparation of a standard sample of the two tailas as per the Pharmacy Pharmacopoeia in the Ayurvedic College, Thiruvanthapuram. The samples were prepared under the supervision of Dr. S. Vijayalakshmi, Research Officer (Ayurveda) for our unit. The details of the ingredients of Murivenna and Hemajeevanti taila are given in Tables I and II respectively.

2. Recording preliminary parameters like colour, smell, appearance, specific gravity, ash content, loss on drying, Iodine value, Saponification value and Acid value. The results are given in Table III.

3. Separating the unsaponifiable matter from the oil of refluxing 2gms of oil with 25ml of alcoholic KOH for 2 hours, the alcohol was distilled off, the residue dissolved in distilled water, extracted, with ether and the ether soluble were taken from this residue.

4. T.L.C. Studies of the unsaponifiables with the two tailas were carried out using two different solvent systems.
(a) Heptane : Benzene : Alcohol (50 : 50 : 1)

(b) Benzene : Acetone (9:1)

RESULTS AND DISCUSSION

From the standardization point of view, the analytical values of Murivenna and Hemajeevanti taila with the values of coconut oil (which is used as a base in preparing these two tailas) given in Table III can be used as preliminary reference standards for market samples of these tailas.

Since these values are mostly related to the purity of the coconut oil, the T.L.C. studies of the tailas were considered more useful to find the presence of the various chemical compounds of the plants used in the tailas, either in their native form or as artifacts. As the T.L.C study of the tailas as such did not give clear separation of compounds the T.L.C studies of the unsaponifiables of the tailas were tried. The Rf values of the spots are given in Tables IV and V. The T.L.C spots are elaborated into graphical profiles in Figs. I and II and this affords standards for these two tailas.

In the finished products of plants, according to current knowledge and possibilities no complete analytical investigation can be carried out. For standardization purpose, the identification of each and every spot revealed by T.L.C may not be necessary; rather a comparison of the overall T.L.C pattern may be sufficient.

The petroleum ether and benzene extracts of the leaves of Wattakaka volubilis were tried on the alumina column and on the Silica gel column for the separation of the compounds. Three compounds were so far isolated. The compounds have some impurities which have to be purified by recrystallisation. One of them seems to be taraxerol from the preliminary reactions, melting point and from the previous studies.

Comparison of the T.L.C pattern of the unsaponifiables of the two tailas using the two solvent systems (a) and (b) indicates that the solvent system (a) is found to be better, as it gives 6 and 5 spots for Murivenna and Hemajeevanti taila respectively, while solvent system (b) gives 4 spots each. Of the different spots given by the two tailas, 3 spots are common in solvent system (a) Rf values 0.27, 0.38 & 0.46 and 2 spots are common in solvent system (b) 0.59 & 0.70. Since both the tailas are having almost the same clinical effect it can be said that the curative effect of the two tailas are due to the common compounds found in them. The isolation and identification of the above compounds are in progress.

From the economic point of view Hemajeevanti taila is to be preferred to Murivenna because the preparation of the formed taila requires only one plant viz Wattakaka volubilis. It is seen widely distributed in Kerala. While the preparation of Murivenna requires eight medicinal plants. Hence Hemajeevanti Taila can be substituted for Murivenna.
Figure 1
HEPTANE - BENZENE - ALCOHOL SOLVENT SYSTEM
Figure 2
BENZENE - ACETONE (9:1) SYSTEM
### TABLE – 1

**INGREDIENTS OF *MURIVENNA***

| S. No. | Ingredients               | Sanskrit Name | Malayalam Name | Quantity | Parts Used |
|--------|---------------------------|---------------|----------------|----------|------------|
| 1.     | *Pongamia glabra*         | Karanja       | Pungu          | 600 gm   | Bark       |
| 2.     | *Piper betle*             | Tambuli       | Thambulam      | 600 gm   | Leaf       |
| 3.     | *Aloe vera*               | Ghritakumar   | Kumari         | 600 gm   | Leaf       |
| 4.     | *Erythrina indica*        | Mura          | Mullumurukku   | 600 gm   | Leaf       |
| 5.     | *Allium cepa*             | Plandu        | Chuvannulli    | 600 gm   | Bulb       |
| 6.     | *Moringa oleifera*        | Sobhanjana    | Sigru          | 600 gm   | Leaf       |
| 7.     | *Borreria hispida*        | Madanaghanti  | Tharuthaval    | 600 gm   | Whole plant|
| 8.     | *Asparagus racemosus*      | Shatamuli     | Shatavali      | 120 gm   |            |
| 9.     | Coconut oil               |               |                | 100 ml   |            |

### TABLE – 2

**INGREDIENTS OF *HEMAJEEVANTI TAILA***

| S. No. | Ingredients               | Sanskrit Name | Malayalam Name | Quantity             | Parts Used |
|--------|---------------------------|---------------|----------------|----------------------|------------|
| 1      | *Wattakaka Volubilis*     | Hemajeevanti  | Vattakkakkakoti| 400 gm + 125 gm ‘Kalkum’ | Leaf       |
| 2      | Coconut Oil               |               |                | 1000 ml              |            |
TABLE – 3

ANALYTICAL VALUES OF *MURIVENNA, HEMAJEVANTI TAILA* AND COCONUT OIL

| S. No. | Parameter                     | Murivenna  | Hemajeevanti Taila          | Coconut oil  |
|--------|-------------------------------|------------|-----------------------------|--------------|
| 1.     | Colour                        | Green      | Dark Green                  | Colourless   |
| 2.     | Smell                         | Pleasant smell | Characteristic smell       | Characteristic smell |
| 3.     | Appearance                    | Viscous    | Viscous                     | Viscous      |
| 4.     | Touch                         | Oily       | Oily                        | Oily         |
| 5.     | Clarity                       | Clear      | Clear                       | Clear        |
| 6.     | Loss on drying at 110°C w/w   | 0.13       | 0.15                        | 0.14         |
| 7.     | Ash Value % w/w               | Nil        | 0.18                        | Nil          |
| 8.     | Sp. Gravity at room Temp.     | 0.92       | 0.92                        | 0.92         |
| 9.     | Acid Value mg/gm              | 2.17       | 2.37                        | 1.67         |
| 10.    | Saponification Value mg/gm    | 293.8      | 296.1                       | 291.6        |
| 11.    | Iodine Value gm/100 gm        | 10.58      | 9.49                        | 8.12         |
TABLE – 4

RESULTS OF T.L.C OF MURIVENNA AND HEMAJEEVANTI TAILA

Heptane : Benzene : Ethylalcohol System (50:50:1)

|      | Murivenna |          |          | Hemajeevanti Taila |          |
|------|-----------|----------|----------|-------------------|----------|
| No. of spots | Rf Values | No. of spots | Rf Values |
|      |           |           |           |                   |           |
| 1    | 0.12      | 1         | 0.08     |
| 2    | 0.27      | 2         | 0.27     |
| 3    | 0.38      | 3         | 0.38     |
| 4    | 0.46      | 4         | 0.46     |
| 5    | 0.54      | 5         | 0.95     |
| 6    | 0.85      |           |          |

TABLE – 5

BENZENE : ACETONE SYSTEM 9:1

|      | Murivenna |          |          | Hemajeevanti Taila |          |
|------|-----------|----------|----------|-------------------|----------|
| No. of spots | Rf Values | No. of spots | Rf Values |
|      |           |           |           |                   |           |
| 1    | 0.25      | 1         | 0.27     |
| 2    | 0.59      | 2         | 0.59     |
| 3    | 0.70      | 3         | 0.70     |
| 4    | 0.86      | 4         | 0.84     |

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