PHARMACOGNOSTICAL AND PHARMACEUTICAL ANALYSIS OF VAMANA YOGA IN THE MANAGEMENT OF EKAKUSTHA W.S.R TO PSORIASIS

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ABSTRACT

Vamana Karma is the best therapy for elimination of vitiated Kapha Dosha[¹]. According to Ayurveda, Ekakustha is a type of Khsudra Kustha, caused due to predominance of Kapha-Vata dosha[²]. In Charak samhita Kustha Chiktsasthan, Vamana Yoga has been mentioned for performing Vamana in Kustha disease.[³] Methods- Vamana yoga was subjected to Pharmacognostical and physico-chemical analysis such as microscopic study, loss on drying, ash value etc. Results- The Pharmacognostical study showed the presence of contents such as; Brown content of Madhuka, Oil globule of Madhuka, Epicarp cells of Madhuka, Epidermal cells of Patola, Fibres of Nimba, Lignified fibres of Kutaj, Lignified parenchymal cells of Kutaj, Lignified stone cells of Kutaj, Stone cells of Nimba, Prismatic crystals of Kutaj, Rhomboidal crystal of Nimba. Spiral vessels of Patola, Trichome of Patola. The Pharmaceutical analysis showed that the loss on drying value 9.53%, pH Value 6.5. Conclusion- The present work was carried out to standardize the finished product Vamana yoga in terms of its identity, quality and purity. Pharmacognostical and Physico-chemical observations revealed the specific characters of all active constituents used in the preparation.
KEYWORDS: Vamana yoga, ekakustha, Pharmacognosy, HPTLC, Pharmaceutical.

INTRODUCTION
Psora means “itch or scurf”. Psoriasis is called as itching disease. Psoriasis is recognized as an chronic inflammatory auto-immune disease caused by genetics, the immune system and enviroinmental factors.

Robert Willan (1757-1812) recognized psoriasis as an independent disease. He identified 2 categories
1) Leprosa graceorum: term used to describe the condition in which skin has scales.
2) Psora Leprosa: term used to describe the condition in which it was eruptive.

National Psoriasis Foundation described 5 varities of skin eruptions under Psoriasis
- Plaque Psoriasis
- Inverse Psoriasis
- Pustular Psoriasis
- Guttate Psoriasis
- Erythrodermic Psoriasis

1. Plaque Psoriasis
Plaque psoriasis effects 80% to 90% of patients making it the most common. Rapid cell growth creates silvery scale, on top of irregular shaped spots of red. Generally found on the scalp, knees, elbows and lower back that may crack and bleed.

2. Inverse Psoriasis
This type appears on creases and skin folds on the body, there is little to no scale and is smooth, yet still enflamed and red.

3. Pustular Psoriasis
A non contagious, non infection type of pustules with inflammation. It can cover large sections of the body or smaller regions. There are three types of Pustular Psoriasis that are mentioned by the National Psoriasis Foundation:
- Von Zumbusch
- Palmoplantar pustulosis or PPP
- Acropustulosis
3) **Guttate Psoriasis**
This type of Psoriasis appears on the trunk and limbs of people under 30 similar in appearance to chicken pox.

4) **Erythrodermic Psoriasis**
Erythrodermic psoriasis may result from a chronic case of Plaque Psoriasis. Effecting most of the surface area of the body, in appearances, this type resembles widespread redness of large areas of the body with pustules. In combination with intense itching and pain.

*Vamana Yoga* is herbal compound formulation mentioned in *Charak Samhita* for the management of *Kustha* for performing Vaman. *Vamana yoga* has 5 herbal contents in equal proportion – *Madanphala, Madhuka, Neemba, Patola, Kutaj*. These all ingredients are helpful in *kustha* disease due to *kashaya* and *tikta rasa*, *laghu* *guna*, *ushna* *virya*. In the present study, the formulation is subjected to Pharmacognostical and pharmaceutical analysis. Preliminary organoleptic features and results of microscopy were verified and all the ingredients were proved to be authentic.

**MATERIALS AND METHODS**

**Collection, identification and authentification of raw drug**
The raw drugs for the preparation of *Vamana Yoga* were procured from the Pharmacy, Gujarat Ayurved University, Jamnagar. The ingredients & parts used in the preparation of the final product are listed in the table 1.

**Preparation of drug**
The final product i.e. *Vamana yoga* was prepared in the pharmacy, Gujarat Ayurved University, Jamnagar.

**Pharmacognostical study**
The Pharmacognostical study comprises of organoleptic study and microscopic study of finished product.

**Organoleptic Study**
The Organoleptic characters of Ayurvedic drugs are very important and give the general idea regarding the genuinity of the sample. Organoleptic parameters like Taste, Colour, odour and touch were scientifically studied in Pharmacognosy laboratory, I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar, Gujarat, India. [4]
Microscopic Study

*Vamana Yoga* was dissolved with water and microscopy of the sample was done without stain and after staining with Phloroglucinol + HCl. Microphotographs of *Vamana yoga* was also taken under Corl-zeiss trinocular microscope.[5]

Physico-chemical analysis

*Vamana yoga* was analyzed using various standard physico-chemical parameters such as Loss on drying, water soluble extract, alcohol soluble extract etc.[6]

High Performance Thin Layer Chromatography (HPTLC)

HPTLC was performed as per the guideline provided by API. Methanolic extract of drug sample was used for the spotting. HPTLC was performed using Toluene + Ethyl acetate + Acetic acid (14:4:2) solvent system and observed under visible light. The colour and $R_f$ values of resolved spots were noted.[7]

RESULTS AND DISCUSSION

Organoleptic characters of Vamana yoga

Organoleptic characters of *Vamana yoga* such as color, odour, taste etc. examined by sensory organs and results are as shown in Table 2.

Microscopic characters of Vamana Yoga

Diagnostic characters of *Vamana yoga* were observed under the microscope are Brown content of Madhuka, Lignified Fibres of Kutaj, Spiral vessels of Patola, Epidermal cell of Patola, Fibers of Nimba, Oil globule of Madhuka, Lignified parenchymal cells of Kutaja, Trichomes of Patola, Lignified stone cells of Kutaj, Rhomboidal crystals of Nimba, Prismatic Crystal of Kutaj, Simple and compound starch grains of Kutaj, Parenchymal cells with starch grains of Kutaj Plate 1.

Physicochemical parameters of Vamana yoga

Physicochemical parameters of *Vamana yoga* such as ash value, water soluble extract, alcohol soluble extract, pH etc. results are shown in Table 3.

HPTLC Study

Chromatogram shows 8 prominent spots at 254nm with maximum $R_f$ value 0.02, 0.32, 0.43, 0.62, 0.68, 0.72, 0.76, 0.94 and 5 spots at 366nm with maximum $R_f$ value 0.02, 0.32, 0.62,
0.68, 0.71 (Plate 2, Fig. 1-2) and three dimensional densitogram is also shown. (Plate 3, Fig. 1-2).

Table 1: Contents of Vamana Yoga.

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Drugs</th>
<th>Latin name</th>
<th>Part used</th>
<th>Approx dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kutaj</td>
<td>Holarrhena antidysentrica Wall</td>
<td>Phala</td>
<td>1 Part</td>
</tr>
<tr>
<td>2.</td>
<td>Madanphala</td>
<td>Randia dumentorum Lam</td>
<td>Phala</td>
<td>1 Part</td>
</tr>
<tr>
<td>3.</td>
<td>Patola</td>
<td>Trichosanthes dioica L.</td>
<td>Phala</td>
<td>1 Part</td>
</tr>
<tr>
<td>4.</td>
<td>Nimba</td>
<td>Azadirecta indica A. Juss.</td>
<td>Twaka</td>
<td>1 Part</td>
</tr>
<tr>
<td>5.</td>
<td>Madhuka</td>
<td>Glycyrrhiza glabra Linn.</td>
<td>Moola</td>
<td>1 Part</td>
</tr>
</tbody>
</table>

Table 2: Organoleptic characters of Vamana Yoga.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Characters</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Colour</td>
<td>Creamish Brown</td>
</tr>
<tr>
<td>2</td>
<td>Odour</td>
<td>Aromatic</td>
</tr>
<tr>
<td>3</td>
<td>Taste</td>
<td>Sweetish Astringent followed by bitter</td>
</tr>
<tr>
<td>4</td>
<td>Touch</td>
<td>Coarse</td>
</tr>
</tbody>
</table>

Table 3: Physicochemical parameters of Vamana Yoga.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Loss on Drying</td>
<td>9.53% w/w</td>
</tr>
<tr>
<td>2</td>
<td>Ash Value</td>
<td>10.131% w/w</td>
</tr>
<tr>
<td>3</td>
<td>Water soluble extract</td>
<td>12% w/w</td>
</tr>
<tr>
<td>4</td>
<td>Methanol soluble extract</td>
<td>6.513% w/w</td>
</tr>
<tr>
<td>6</td>
<td>pH</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Plate 1: Microscopic characters of Vamana Yoga

Brown content of Madhuka
Lignified Fibres of *Kutaj*

Spiral vessels of *Patola*

Lignified parenchymal cells of

Trichomes of *Patola*
Lignified stone cells of *Kutaj*

Rhomboidal crystals of *Nimba*

Prismatic Crystal of *Kutaj*

Simple and compound starch grains of *Kutaj*
Parenchymal cells with starch grains of *Kutaj*

Plate 2: Densitogram of *Vamana Yoga* at 254 nm and 366 nm.

Peak display at 254 nm

Peak display at 366 nm
Plate 3: Three dimensional HPTLC (3D) Densitogram.

254 nm

366 nm

CONCLUSION
Quality control analysis of any formulation is very much necessary to assess its safety, purity and universal acceptability for the particular disease. Standardization is a measurement for ensuring the quality control enabling the reproducibility of the formulation. The pharmacognostical and physico chemical analysis of Vamana yoga confirmed the purity and genuinity of the drug. Further studies may be carried out on this formulation on the basis of observation made and results of experimental studies. This study may be beneficial for future researchers and can be used as a reference standard in the further quality control researchers.

REFERENCES
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