PHARMACOGNOSTICAL AND PHYSICOCHEMICAL ANALYSIS OF VIDARIKANDA CHURNA: AYURVEDIC HERBAL FORMULATION

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ABSTRACT

Pueraria tuberosa; is one among the best nutritive herbs in Ayurveda. Vidarikanda is considered as Vata and Pitta pacifying and effective as Rayasan and Bruhaniya in Ayurvedic treatises hence Vidarikanda Churna is selected in the present study for the management of Karshya. The present study is aimed at setting up a standard profile of Vidarikanda Churna which was prepared using oraganoleptic pharmacognostically and pharmaceutical aspects. The test drug Vidarikanda Churna was subjected to authentication by above analysis as per standard procedures and the observations were systematically recorded. Pharmacognostical findings showed pitted vessel, simple and compound starch grains, rhomboidal crystal, brown content tenin of Vidari and oil globules of Vidari. Organoleptic features of coarse powder were harmonized with API. Pharmaceutical analysis showed loss on drying 51% w/w, water soluble extract 6.8 % w/w, methanol soluble extract 3.24 %, ash value 0.78 % and Ph value 6.5. After the analysis of the various pharmacognostical and pharmaceutical analysis of Vidarikanda Churna, it was concluded that the formulation fulfill the minimum qualitative standards at a preliminary level.

KEYWORDS: Vidarikanda Churna, Karshya, pharmacognosy, pharmaceutical.
INTRODUCTION

_Vidarikanda_, Indian kudzu or _Pueraria tuberose_; is one among the best nutritive herbs in Ayurveda.[1] It belongs to the family Fabaceae which is a perennial climber with woody tuberculated stem with large tuberous roots. A completely grown plant measures 5-6 meters in height. This plant having white flowers with pink shade. It is habitually found throughout the India except in very humid or very dry regions.[2]

In Ayurveda, its roots are mainly used as medicinal purposes. _Vidarikanda_ has _Madhura Rasa_, _Guru_, _Snigdha Guna_ and _Shita Veerya_. These all properties are exactly opposite to the conditions resulted due to _Apatarpana_. _Apatarpana_ leads to _Karshya_ (emaciation) which is among one of the common problems in india as well as worldwide. _Karshya_ means emaciation.[3] It results from _Alpashana_ (less intake of food), _Rukshashana_ (nutritionally deficient food), _Langhana_(fasting), _Shoka_ (psychological disturbances), by nature in _Vataja Prakriti_ and _Vega Dharana_ (suppression of urges) etc. which leads to vitiation of _Vata_.[4] For this condition _Bruhan Chikitsa_ is advised by Ayurveda seers.[5] _Vidarikanda_ have properties like _Jivaniya_ (improving vitality), _Bruhniya_ (Nourishing), _Balya_ (strengthen), _Rasayan_ (rejuvenation) etc., that’s why _Vidarikanda Churna_ is selected in the management of _Karshya_.

In this regard present work has been carried out to standardize and evaluate the pharmacognostical and pharmaceutical properties of _Vidarikanda Churna_.

AIMS AND OBJECTIVES

The study was conducted to standardize and evaluate the pharmacognostical and pharmaceutical properties of _Vidarikanda Churna_.

MATERIALS AND METHOD

Collection of raw drugs

The raw drug materials was collected from the pharmacy department, Gujarat Ayurved University and were identified and authenticated at Pharmacognosy laboratory IPGT & RA, Jamnagar.

Preparation of Churna

Drug was prepared in the pharmacy of 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 important and give the common idea about the authenticity of the sample. Organoleptic parameters like Taste, Colour, odour, touch and Consistency were carried out in the laboratory of Pharmacognosy, I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar, Gujarat, India.\[6\]

Microscopic Study
*Vidarikanda Churna* was powdered and dissolved with water and microscopy of the sample was done without stain and after staining with Phloroglucinol + HCl. Microphotographs of *Vidarikanda Churna* was also taken under Corl-zeiss trinocular microscope.\[7\]

Physico-chemical parameters
*Vidarikanda Churna* was analyzed via various standard physico-chemical parameters such as loss on drying, total Ash value, water soluble extract, alcohol soluble extract, ph etc.\[8\]

RESULTS and DISCUSSION
Organoleptic Characters
Organoleptic characters of *Vidarikanda Churna* such as colour, odour, taste etc were examined by sensory organs and results are as shown in below Table 1.

<table>
<thead>
<tr>
<th>Organoleptic Characters</th>
<th>Vidarikanda Churna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taste</td>
<td>Madhura (Sweet)</td>
</tr>
<tr>
<td>Colour</td>
<td>light creamish white</td>
</tr>
<tr>
<td>Odour</td>
<td>Characteristics</td>
</tr>
<tr>
<td>Touch</td>
<td>Finny</td>
</tr>
<tr>
<td>Consistency</td>
<td>Fine Powder</td>
</tr>
</tbody>
</table>

Microphotographs
*Vidarikanda Churna* were observed under the microscope and showed different diagnostic characters of *Viadarikanda*, these are simple and compound starch grain, fragment of annular border pitted vessels, simple starch grain with hilum, oil globules, rhomboidal crystal, brown contain tannins and loop of simple fibers as shown in below plate 1.
Plate: 1 Microphotographs of *Vidarikandachurna*

<table>
<thead>
<tr>
<th>1. Vidarikanda Churna</th>
<th>2. Simple and compound starch grain</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Fragment of annular pitted vessel</td>
<td>4. Simple starch grain with hilum</td>
</tr>
<tr>
<td>5. Oil globules</td>
<td>6. Rhomboidal crystal</td>
</tr>
<tr>
<td>7. Brown contain tannin</td>
<td>8. Loop of simple fibres</td>
</tr>
</tbody>
</table>

**Physicochemical parameters of *Vidarikanda Churna***

The Physicochemical parameters results of *Vidarikanda Churna* such as ash value, water soluble extract, alcohol soluble extract, pH etc. are show in below Table 2.

**Table 2: Physicochemical parameters of *Vidarikanda Churna***

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Test</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Loss on Drying</td>
<td>51 %w/w</td>
</tr>
<tr>
<td>2</td>
<td>Ash Value</td>
<td>0.78 %w/w</td>
</tr>
<tr>
<td>3</td>
<td>Water-soluble Extract</td>
<td>6.8 %w/w</td>
</tr>
<tr>
<td>4</td>
<td>Methanol-soluble Extract</td>
<td>3.24 %w/w</td>
</tr>
<tr>
<td>5</td>
<td>pH (5% solution)</td>
<td>6.5</td>
</tr>
</tbody>
</table>
DISCUSSION

In Ayurveda, Vidarikanda roots are mainly used as medicinal purposes. It has Madhur Rasa, Guru, Snigdha Guna and Shita Veerya. Acharya Charaka mention the Vidarikanda in Snehopaga Mahakashaya\(^9\), Madhur Skandha\(^10\) and Kanthya\(^11\) and also mentioned in Shaka Varga\(^12\) (vegetable) which have the property of Jivniya (improving age), Bruhniya (Nourishing), Balya (strengthen), Rasayana (rejuvenation), Vrushya (aphrodisiac), Kanthya (improve voice), diuretic, sweet and cold. Vidarikanda broadly used in a variety of formulation and used in diseases like Raktapitta, Rajyakshama, Kshatkshina, Kasa, etc. and specially mentioned as Bala Varna Vardhaka, Rasayana (rejuvenation), Vajikara (aphrodisiac).

The present study was undertaken to standardize Vidarikanda Churna, hence the material was subjected to minimum pharmacognostical and pharmaceutical analysis. Pharmacognostical evaluation of Vidarikanda Churna showed that all the observed characters which are from ingredient used in the formulations showed that authenticity and purity of the finished product. Physico-Chemical parameters of Vidarikanda Churna like Ash Value, Loss on Drying, Acid insoluble ash, Water soluble extract, Methanol soluble extract, pH Value all were found to be within the normal range.

CONCLUSION

Pharmacognostical and pharmaceutical analysis of Vidarikanda Churna showed the definite characters of ingredients which were used in the preparation. Pharmacognostical results confirm the ingredients at a preliminary level. Though the groundwork for the standardization of Vidarikanda Churna was sheltered in this study, further important analysis and investigations are essential for advance identification of all the active chemical constituents. The result of this study may be supportive as the reference for the further research work.

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