PHARMACEUTICAL STUDY OF APATYAKARAM GHRITA.

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ABSTRACT:

Apatyakaram ghrita is a classical formulation stated in chapter pumanjat baladik vajikaran pad in text of charak samhita. Prepared with decoction of Shatavari, Vidari kanda, Maash, Atmagupta, Shwadnstra, kalka of same drug, Go-dugdha, Go-ghrita. Individual ingredients of this formulation have aphrodisiac, rasayan, medhya etc properties. Rasayan is the formulation which promotes physical and mental health, helps to increase body’s capacity to overcome diseases and gives bala to the sharir and mana and increases satwa guna,

Aim: Preparation and standardization of Apatyakaram ghrita with special reference to Charak Samhita, Objective: 1. Authentication and standardization of raw material.2. Preparation of Apatyakaram Ghrita as described in Charak Samhita.3. To analyze the study drug physico-chemically to develop its standard, study deals with physicochemical analysis and standardization of the formulation, it can be inferred that Apatyakaram Ghrita may be effective in osteoporosis, osteoarthritis, cognitive impairment and malnourishment in elderly people.

Key words: Apatyakaram Ghrita, pharmaceutical study, Geriatric health problems, Anti-osteoporosis, Anti-arthritis, Cognitive health, malnourishment.

INTRODUCTION

Ageing is a process, which begins before birth and continues throughout the entire life span. It is physiological phenomenon which results because of involuntary changes occurring in mind and body systems. The common geriatric health issues among the the elderly are degenerative osteoarthritis, cognitive health problems, mental health, physical injury, malnutrition, etc.

Acharya shushruta described old age as above 70 yrs1 and acharya charak on other hand mentioned old age above 60 yrs2. As per fundamental principle of Tridosha, Vata is the predominant dosha during old
age. Ayurveda has special branch called Rasayan, which has got potential for prevention of disease by promotion of health and management of diseases occurring in old age. To deals with problems related to ageing, there are various kalpanas are described in Bhaishajya Kalpana Vidyan, but among all Kaplans Snehalpana is most suitable kalpana for geriatric health problems, and among four Sneha Ghrita is best because of its unique nature of incorporating the properties of the drug with which its comes in contact, without leaving its own natural qualities.

Apatyakaram Ghrita\(^4\) a medicated ghee formulation mentioned in charak samhita, has minimum contents, and may very effective in geriatric health problems, so it is opportunity to work on this formulation and may serve as one of the effective substitute drug which will be authenticated and standardized formulation.

Need and rationale of the study:
1. To develop the herbal formulation with standard manufacturing process according ayurvedic classics and to establish the standard of the study drug.
3. To serve the mankind by providing safe, efficient and authentic formulation to overcome common geriatric health problems.

AIM:
Preparation and standardization of Apatyakaram ghrita with special reference to Charak Samhita.

OBJECTIVE:

1. Authentication and standardization of raw material.
2. Preparation of Apatyakaram Ghrita as described in Charak Samhita.
3. To analyze the study drug physico-chemically to develop its standard.

MATERIALS AND METHOD:

Materials:

Collection of Raw Drug:
Raw drugs were collected from the local market of Vashi, Navi Mumbai, in the month of August 2018. The collected drug was identified and authenticated by Dravyaguna Department of Y.M.T Ayurvedic Medical College, Kharghar, Navi Mumbai.

Method of preparation of Apatyakaram Ghrita

The all kwathya ingredients of Apatyakaram Ghrita (Table 1) were slightly pounded and soaked in 16 times of water in large vessels separately over night. On next day under moderate flame of kalka of Shatavari, Varahikanda, Maash, Aatmagupta, Shwadanshtra was added, followed by addition of kwath and cow milk. To get final product, the contents were subjected to mild heat till up to Sneha Siddhi features were observed.

Pharmacognostical evaluation of ingredients of Apatyakaram Ghrita

Organoleptic study

Individual powders were subjected for various sensory characters like colour,
taste, odour etc and physico-chemical study (Table 2) were carefully noted down.

**Physico-chemical study**

*Apatyakaram ghrita* was analyzed using various standard physico-chemical parameters such as Refractive index, specific gravity, saponification value, iodine value, and Acid value, etc. at central research laboratory, Y.M.T Ayurvedic Medical College, Navi Mumbai.

**Organoleptic Characteres of Apatyakaram Ghrita**

*Apatyakaram Ghrita* was characterized as homogenous liquid with *Goshrita* consistency, yellow in colour, mixed smell of *maash* (black gram) and *ghrita* in odour, mixed taste of *maash* and other ingredients and it is immiscible in water.

**RESULTS AND DISCUSSION:**

Organoleptic characters were noted down and are depicted in Table 3.

**Physico-chemical analysis**

*Apatyakaram Grita* was analyzed using various standards, physico-chemical parameters such as acid value, saponification value, refractive index, iodine value, specific gravity etc (Table 4).

**DISCUSSION:**

Pharmacognostical study reveals authentification of individual raw drugs of *Apatyakaram Ghrita*, and quality control parameters were observed. *Apatyakaram Ghrita* is an aphrodisiac formulation described in *Charak samhita vajikaran adhyay (4th pad)*, but ingredients of the formulation similarly have *rasayan karma*. In old age there is predominance of *vata dosha* so degenerative changes of joint and bones are most common, it leads to osteoporosis, osteoarthritis and cause locomotor disability, all herbs in *Apatyakaram ghrita* are *vata shamak* (suppressant), *Asparagus racemosus* *Tribulus terrestris* have anti-arthritic, anti-inflammatory and anti-osteoporotic action, *Mucuna pruiens* shows anti-inflammatory action, *Dioscorea bulbifera* *Vigna mungo* gives relief through its analgesic and anti-inflammatory action, prevents harm in bone and improves arthritic condition.

Cognitive health problems i.e. Depression, senile dementia, and Alzheimer’s diseases are common in elderly age and that may cause sadness, low self worth, low energy, and low concentration. *Asparagus racemosus* is *medhya*, *Dioscorea bulbifera* has memory enhancing property, *Mucuna pruiens* reduced psychological stress and effective in management of Parkinson’s and Alzheimer’s disease. *Vigna mungo* gives protection against stress and prevent neurodegenerative disorders. *Go-ghrita* is cognitive.

With increase age people become more vulnerable to malnourishment, all ingredients used in *Apatyakaram Ghrita* are *balya, agnivardhak, bruhan, Go-ghrita* and *Go-dudgha* are *jeevaniya, rasayan, aajanmastmya, dhatu poshak* and *vardhak*. *Rasayan* is science of nutrition, geriatric and rejuvenation. It influences fundamental aspect of the body i.e *dhatu, upadhatu, agni, srotas and mala*, all herbs do *shodhan, pachan, puran* and *poshan* of
all body elements at their cellular level and improves dhattwagni and quality of dhatu, which gives bala to the sharir and mana and increase satva guna. Hence Apatyakaram Ghrita is not only an aphrodisiac (vajikaran) formulation, but a good rasayan formulation for old age people and may be beneficial in geriatric health problems.

CONCLUSION:
Pharmacognostical study findings confirm the authenticity of the ingredients present in Apatyakaram Ghrita. It is concluded that the formulation meets maximum qualitative standards based on physicochemical parameters. The results of this study may be used as the reference standards in further research.

From above context it can be inferred that Apatyakaram Ghrita may be effective in osteoporosis, osteoarthritis, cognitive impairment and malnourishment in elderly people.

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### Table 1: Ingredients of Apatyakaram Ghrita

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Drug Name</th>
<th>Latin Name</th>
<th>Part Used</th>
<th>Quantity For Kwath</th>
<th>Quantity For Kalka</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shatavari</td>
<td>Asparagus racemosus</td>
<td>Root</td>
<td>200 gm</td>
<td>50 gm</td>
</tr>
<tr>
<td>2</td>
<td>Vidarikanda</td>
<td>Dioscorea bulbifera</td>
<td>Root</td>
<td>200 gm</td>
<td>50 gm</td>
</tr>
<tr>
<td>3</td>
<td>Maash</td>
<td>Vigna mungo</td>
<td>Seed</td>
<td>200 gm</td>
<td>50 gm</td>
</tr>
<tr>
<td>4</td>
<td>Aatmagupta</td>
<td>Mucuna pruriens</td>
<td>Seed</td>
<td>200 gm</td>
<td>50 gm</td>
</tr>
<tr>
<td>5</td>
<td>Shwadanstra</td>
<td>Tribulus terrestris</td>
<td>Fruit</td>
<td>200 gm</td>
<td>50 gm</td>
</tr>
<tr>
<td>6</td>
<td>Goghrita</td>
<td>(Cow Ghee)</td>
<td></td>
<td>1 kg</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Godugdha(Cow Milk)</td>
<td></td>
<td></td>
<td>8 liters</td>
<td></td>
</tr>
</tbody>
</table>

### Table 2: Physico-chemical study of Raw Drug

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Drug Name</th>
<th>LOD%</th>
<th>pH churna</th>
<th>pH Kwath</th>
<th>Ash value</th>
<th>Acid insoluble ash</th>
<th>Water Soluble Extractive Value</th>
<th>Alcohol Soluble Extractive Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shatavari</td>
<td>6.13</td>
<td>6.09</td>
<td>6.1</td>
<td>5.418</td>
<td>2.364</td>
<td>37.257</td>
<td>16.55</td>
</tr>
<tr>
<td>2</td>
<td>Varahikanda</td>
<td>10.18</td>
<td>5.95</td>
<td>5.62</td>
<td>2.750</td>
<td>0.2895</td>
<td>22.129</td>
<td>4.713</td>
</tr>
<tr>
<td>3</td>
<td>Maash</td>
<td>9.94</td>
<td>5.59</td>
<td>5.55</td>
<td>2.963</td>
<td>0.085</td>
<td>-</td>
<td>5.440</td>
</tr>
<tr>
<td>4</td>
<td>Aatmagupta</td>
<td>6.19</td>
<td>6.10</td>
<td>6.50</td>
<td>3.346</td>
<td>0.334</td>
<td>27.577</td>
<td>8.153</td>
</tr>
<tr>
<td>5</td>
<td>Shwadanstra</td>
<td>4.75</td>
<td>5.99</td>
<td>6.01</td>
<td>14.78</td>
<td>3.719</td>
<td>16.217</td>
<td>0.008</td>
</tr>
</tbody>
</table>

### Table 3: Organoleptic characters of ingredients

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Drug Name</th>
<th>Colour</th>
<th>Odour</th>
<th>Taste</th>
<th>Gun a</th>
<th>Action on</th>
<th>Rasa</th>
<th>Veerya</th>
<th>Vipak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Shatavari</strong></td>
<td>White</td>
<td>No specific odour</td>
<td><strong>Madhur, Tikta</strong></td>
<td><strong>Vata ↓, Pitta ↓</strong></td>
<td>Madhur</td>
<td>Sheet</td>
<td>Madhur</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td><strong>Vidarikanda</strong></td>
<td>Light cream</td>
<td>No specific odour</td>
<td><strong>Madhur, Tikta, Kattu</strong></td>
<td><strong>Vata ↓, Pitta ↓, Kaph ↓</strong></td>
<td>Madhur</td>
<td>Ushna</td>
<td>Kattu</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td><strong>Maash</strong></td>
<td>Black</td>
<td>Characteristic</td>
<td><strong>Guru Snigdha</strong></td>
<td><strong>Vata ↓, Pitta ↑, Kaph ↓</strong></td>
<td>Madhur</td>
<td>Ushna</td>
<td>Madhur</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td><strong>Aatmagupta</strong></td>
<td>Greyish white</td>
<td>No specific odour</td>
<td><strong>kashay, Tikta Snigdha</strong></td>
<td><strong>Vata ↓, Pitta ↑, Kaph ↓</strong></td>
<td>kashay, Tikta</td>
<td>Ushna</td>
<td>Madhur</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td><strong>Shwadanstra</strong></td>
<td>Greenish white</td>
<td>No specific odour</td>
<td><strong>Madhur, Tikta, Kattu</strong></td>
<td><strong>Vata ↓, Pitta ↓</strong></td>
<td>Madhur</td>
<td>Sheet</td>
<td>Madhur</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td><strong>Go ghrita</strong> <em>(Cow Ghee)</em></td>
<td>Yellow</td>
<td>Characteristic</td>
<td><strong>Madhur Snigdha</strong></td>
<td><strong>Vata ↓, Pitta ↓</strong></td>
<td>Madhur</td>
<td>Sheet</td>
<td>Madhur</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td><strong>Go dgdha</strong> <em>(Cow Milk)</em></td>
<td>White</td>
<td>Characteristic</td>
<td><strong>Madhur Snigdha</strong></td>
<td><strong>Vata ↓, Pitta ↓</strong></td>
<td>Madhur</td>
<td>Sheet</td>
<td>Madhur</td>
<td></td>
</tr>
</tbody>
</table>
Table 4: Physico-chemical parameters

<table>
<thead>
<tr>
<th>Parameter studied</th>
<th>Refractive index</th>
<th>LOD %</th>
<th>Melting point</th>
<th>Specific gravity</th>
<th>Density</th>
<th>Viscosity</th>
<th>Acid value</th>
<th>Rancidity test</th>
<th>Iodine value</th>
<th>Saponification value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>1.4603</td>
<td>1.45</td>
<td>44°C 9</td>
<td>0.9069</td>
<td>0.8742</td>
<td>75.83</td>
<td>1.18</td>
<td>Fat is not oxidized</td>
<td>40.31</td>
<td>192.32</td>
</tr>
</tbody>
</table>

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