

**PHARMACEUTICAL STUAY OF APATYAKARAM GHRITA.****Kamble Viveka Vithal*¹, Pargunde Sheela A², Khobragade Vaishali M.³**

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ABSTRACT:

Apatyakaram ghruta 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*, *Shwadanshtra*, *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 *satva guna*. Aim: Preparation and standardization of *Apatyakaram ghruta* with special reference to *Charak Samhita*, Objective: 1. Authentication and standardization of raw material. 2. Preparation of *Apatyakaram Ghruta* 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 Ghruta* may

be effective in osteoporosis, osteoarthritis, cognitive impairment and malnourishment in elderly people.

Key words: *Apatyakaram Ghruta*, 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 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 *Kaplanas* *Snehakalpana* is most suitable *kalpana* for geriatric health problems, and among four *Sneha Ghrit* is best because of its unique nature of incorporating the properties of the drug with which it comes in contact, without leaving its own natural qualities³.

*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 to ayurvedic classics and to establish the standard of the study drug.
2. Critical analysis of preparation method of *snehapaka kalpana* of selected herbs.
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 its water⁵ in large vessels separately overnight. On next day under moderate flame of *kwath* was prepared and filtered through cotton cloth. In a large vessel *Go- Ghrita* was poured, when it liquefied under mild flame *kalka*⁶ of *Shatavari*, *Varahikanda*, *Maash*, *Aatmagupta*, *Shwadanshtra* was added, followed by addition of *kwath*⁷ and cow milk. To get final product, the contents were subjected to mild heat till up to *Sneha Siddhi*⁸ 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 *Go- ghrita* 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 authentication 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*¹⁹ (suppressant), *Asparagus racemosus*, *Tribulus terrestris* have anti-arthritic⁹, anti-inflammatory¹⁰ and anti-osteoporotic action⁹, *Mucuna pruriens* shows anti-inflammatory action¹¹, *Dioscorea bulbifera*, *Vigna mungo* gives relief through its analgesic and anti-inflammatory action¹², prevents harm in bone and improves arthritic condition¹³.

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*¹⁹, *Dioscorea bulbifera* has memory enhancing property¹⁴, and beneficial effect on learning ability and memory impairment, *Mucuna pruriens* reduced psychological stress and effective in management of Parkinson's and Alzheimer's disease¹⁵. *Vigna mungo* gives protection against stress and prevent neurodegenerative disorders¹⁶. *Go-ghrita* is cognitive¹⁷.

With increase age people become more vulnerable to malnourishment, all ingredients used in *Apatyakaram Ghrita* are *balya*, *agnivardhak*, *bruhan*. *Go-ghrita* and *Go-dugdha* are *jeevaniya*, *rasayan*, *aajanmastmya*, *dhatu poshak* and *vardhak*¹⁸. *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*)¹⁹ formulation, but a good *rasayan*¹⁹ 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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FIG.1: APTYAKARAM GHRITA

TABLE:**Table 1: Ingredients of Apatyakaram Ghrita**

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

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

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

Table 3: Organoleptic characters of ingredients

Sr. No	Drug Name	Colour	Odour	Taste	Gun a	Acti on on	Rasa	Veer ya	Vipa k
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						Dosh a			
1.	<i>Shatavar i</i>	White	No specific odour	<i>Madhur, Tikta</i>	<i>Guru , Snigd ha</i>	<i>Vata ↓, Pitta ↓,</i>	<i>Madhur</i>	<i>Sheet</i>	<i>Mad hur</i>
2.	<i>Vidarika nda</i>	Light cream	No specific odour	<i>Madhur,T ikta, Kattu</i>	<i>Lagh u Snigd ha</i>	<i>Vata ↓, Pitta ↓, Kaph a↓</i>	<i>Madhur,T ikta, Kattu</i>	<i>Ushn a</i>	<i>Kattu</i>
3.	<i>Maash</i>	Black	Character istic		<i>Guru , Snigd ha</i>	<i>Vata ↓, Pitta ↑, Kaph a↑</i>	<i>Madhur</i>	<i>Ushn a</i>	<i>Mad hur</i>
4.	<i>Aatmagu pta</i>	Greyi sh white	No specific odour	<i>kashay,Ti kta</i>	<i>Guru Snigd ha</i>	<i>Vata ↓, Pitta ↑, Kaph a↑</i>	<i>kashay, Tikta</i>	<i>Ushn a</i>	<i>Mad hur</i>
5.	<i>Shwadan stra</i>	Green ish white	No specific odour	<i>Madhur,T ikta,</i>	<i>Lagh u Snigd ha</i>	<i>Vata ↓, Pitta ↓</i>	<i>Madhur</i>	<i>Sheet</i>	<i>Mad hur</i>
6.	<i>Go ghrita (Cow Ghee)</i>	Yello w	Character istic	<i>Madhur</i>	<i>Snigd ha</i>	<i>Vata ↓, Pitta ↓</i>	<i>Madhur</i>	<i>Sheet</i>	<i>Mad hur</i>
7.	<i>Go dugdha (Cow Milk)</i>	White	Character istic	<i>Madhur</i>	<i>Snigd ha</i>	<i>Vata ↓, Pitta ↓</i>	<i>Madhur</i>	<i>Sheet</i>	<i>Mad hur</i>

Table 4: Physico-chemical parameters

Parameter studied	Refractive index	LOD %	Melting point	Specific gravity	Density	Viscosity	Acid value	Rancidity test	Iodine value	Saponification value
Result	1.4603	1.45	44 ⁰ C	0.9069	0.8742	75.83	1.18	Fat is not oxidized	40.31	192.32

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