



## A REVIEW STUDY OF *GOGRITA* (COW'S GHEE)

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### ABSTRACT-

*Ahara, Nidra, Bramhcharya* are *Traya Upstambha* (like pillar which supports building) in Ayurveda. *Ahara* has been enumerated first, which shows its importance. *Acharya Charaka* has mentioned in *Agrya prakrana* that *Anna* is the best sustainer of life. *Ghrita* is one such *Snigdha Ahara Dravya* which is viewed as a necessary piece of the human eating regimen in India for a long time. *Ghrita* is one among the best *Ajasrika Rasayana*. It is *Ayu Vardhaka*, *Balavardhaka*, *Ojovardhaka*, *Vayasthapaka*, *Dhatuposhaka* and is supreme in *Snehana Dravya*. By virtue of its *Yogavahitva*, as per its ingredients the medicated *Ghrita* will be attaining properties of the ingredients without forfeiting its own properties. *Goghrita* is the best among all the *Ghrita*. *Goghrita* is having *Madhura Rasa*; *Guru*, *Snigdha*, *Mridu Guna*; *Madhura Vipaka* and *Sheeta Veerya*. It is having *Chakshusya*, *Balya*, *Vrisya*, *Jeevaneeya*, *Medhya*, *Vishaghna* and *Vatapitta shamaka* properties which is indicated in *Jeerna jvara*, *Kshaya*, *Visha*, *Daha*, *Shotha*, *Shoola*, *Unmada*, *Apasmara* and many other diseases.

Key words – *Ahara*, *Ghrita*, *Goghrita*, *Sneha*.

### INTRODUCTION-

*Acharya Charaka* has mentioned in *Agrya prakrana* that *Anna* is the best sustainer of life<sup>1</sup>. He also described that the life of all living things is food and the entire world seeks food. Complexion, clarity, good voice, long life, understanding, happiness, satisfaction, growth, strength and intelligence all are established in *Ahara*. *Acharya Sushruta* has also mentioned that diet is nourishing, gives strength immediately, sustains

body and promotes life span, energy, memory, *Ojas* and digestive power. *Ghrita* is one such *Snigdha Ahara Dravya* which is viewed as a necessary piece of the human eating regimen in India for a long time. *Goghrita* is the best among all the *Ghrita*<sup>2</sup>.

## AIM AND OBJECTIVE OF STUDY-

The present study is aimed on critical review of ancient *Ayurvedic* wisdom and recent scientific information regarding *Goghrita* (clarified cow's butter).

## MATERIAL AND METHODS-

Review of literature is done with the help of ancient and present scriptures of *Ayurveda*, research articles including physicochemical and pharmacological properties, various publications related to diet and nutrition with reference to *Goghrita*. It was then critically analyzed and findings were reported.

## LITERATURE REVIEW-

### *Nirukti*

The word 'Ghrita' is derived from 'Ghriti Ghriyate Ghri Seke Anjighrisibhyah Ktah'. *Ghrita Nishpatti* – *Ghrita* has used the meaning 'extracted from milk'.

### *Goghrita Synonyms-*

*Abhanjyan, Ajya, Amrita, Abhidhar, Abhangya, Chaupar, Ghrita, Habi, Jivania, Mraksha, Nabanitak, Pabitra, Sarpi, Srankshan, Snehan, Sneha, Snigdhata, Taijas.*

### *Vernacular names-*

English: Clarified Butter

Hindi: Ghee

Malayalam: Ney

Telegu: Neyyi

Tamil: Ney

Assamese: Gheeo

### **1. Charaka Samhita-**

*Goghrita* is beneficial for providing nutrition to all the *dhatu* and *ojas* of body. It is considered as best among all types of *ghrita*. It is best in alleviating *vatapitta dushṭi*. It is having *Chakshusya, Balya, Vṛisya, Kaṇṭhya, Jeevaneeya, Medhya, Vishaghna, Kaphakara* and *Vatapittahara* properties. It is indicated in *Jeernā jvara, Kshaya, Visha, Daha, Shotha, Shoola, Unmada, Apasmara, Mada, Murccha* and many other diseases. It pacifies *Vata* by *Snehana karma*, *pitta* by *Sheeta veerya* and *Kapha dosha* by *Sanskara* with other drugs. It specially pacifies *pitta* by the virtue of its *Madhura rasa* and *Vipaka, sheeta veerya* and *Manda guna*<sup>3</sup>.

**2-Sushruta Samhita-**

*Goghrita* is *Cakshusya, balya, vatapittadoshahara* having *Madhura vipaka* and *Sheeta veerya*<sup>4</sup>.

**3. Astanga Hridyam-**

It is *Snehottam* and best among *Vayasthapana* (anti-ageing) drugs having *Sahasraveerya* doing *Sahasra karma*, which indicates the high potency and greater utility of *Ghrita*<sup>5</sup>.

**4. In Nighantus-**

*Dhanwantari Nighantu* : *Subarnadi varga*<sup>6</sup>.

*Madanpal Nighantu* : *Paniyadi varga*<sup>7</sup>.

*Kaiyadev Nighantu* : *Ghrita varga*<sup>8</sup>.

*Bhavaprakash Nighantu* : *Ghrita varga*<sup>9</sup>.

**Properties of Goghrita from Nighantus**

Properties	Rasa	Guna	Veerya	Vipaka	Prabhava
<i>Kaiyadev Nighantu</i>	-	-	-	<i>Madhura</i>	<i>Tridoshjeet, Balya, Vrishya</i>
<i>Dhanwantari Nighantu</i>	-	-	<i>Sheeta</i>	<i>Madhura</i>	<i>Vatapittavisha paham, Balya</i>
<i>Madanpal Nighantu</i>	<i>Madhura</i>	<i>Guru</i>	<i>Sheeta</i>	-	<i>Tridoshsamak, rasayan</i>
<i>Bhavaprakash Nighantu</i>	<i>Madhura</i>	<i>Guru</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Vatapittakapha paham, rasayan</i>

**Pharmacodynamics:**

*Gana: Madhura Skandha*

*Source: Jangama Sneha*

*Rasa: Madhura*

*Guna: Snigdha, Guru*

*Veerya: Sheeta*

*Vipaka: Madhura*

*Prabhava: Medhya, Vishaghna*

*Doshaprabhava : Vata-pittashamaka*

*Karma: Medhya, Agnivardhak*

*Action: Rasayana, Vajikarana, Rasavardhaka, Swarya, Varnya, beneficial for Bala, Vriddha, Abala, Kshata and Ksheena; increases Oja, Medha, Smruti, Agni, and Indriyabala*

*Therapeutic Uses- Raktapitta, Parshvashoola, Karshya, Daurbalya, Udvarta, Gulma, Kasa, Garbhapatya, Jeerṇa jvara, Timira, Unmada, Apasmara.*

## Preparation

*Goghrita* is prepared mainly by two methods, first being the traditional and second being direct cream method. In traditional method, cow milk is boiled and cooled at room temperature. Some curd is added as starter culture, mixed, and incubated at room temperature. Curd formed is manually churned until butter float on top of the buttermilk. Butter is washed using water to remove residual buttermilk and then heated in stainless steel container till it gets clarified. Clear liquid *ghrita* is then obtained.

In direct cream method, cream is separated from whole cow milk and heated in stainless steel pan and clear molten *Ghrita* is then obtained.

There is not much difference in properties of *Ghrita* prepared by both traditional and direct cream method, but the *Ghrita* prepared from traditional method has greater docosahexaenoic acid, Omega-3 long-chain polyunsaturated fatty acids content as compared to *Ghrita* prepared by direct cream method.

## Chemical composition:

The composition of *Goghrita* is as follows-

Moisture : 14.4%

Fat : 32.4%

Protein : 36.0%

Lactose : 12.0%

Ash : 05.2%

Triglyceride : 97-98%

Diglycerides : 0.25-0.4%

Monoglycerides : 0.016-0.038%

Glycerylesters : 0.011-0.015%

Free fatty acids : 0.1-0.44%

Phospholipids : 0.2-1%

Sterols : 0.22-0.41%

Vitamin A : 2500 IU per 100 gms.

Vitamin D :  $8.5 \times 10^{-7}$  gm. per 100 gms.

Vitamin E :  $24 \times 10^{-3}$  gm. per 100 gms.

Vitamin K :  $1 \times 10^{-4}$  gm. per 100 gms.

## DISCUSSION

### Anticancer activity:

A study was conducted on feeding Cow's *Ghee* versus Soyabean oil on 7,12-dimethylbenz(a)-anthracene (DMBA) induced mammary carcinogenesis and expression of cox-2 and peroxisome proliferators activated receptors- $\gamma$  (PPAR- $\gamma$ ) in mammary glands of rats revealed anticancer potential of Cow's ghee. The study proved that Soybean oil attenuates mammary carcinogenesis induced by DMBA whereas Cow's ghee opposed it<sup>10</sup>. The study proved that cow ghee compared to soybean oil downregulates the enzyme activities responsible for carcinogen activation in liver and upregulates carcinogen detoxification activities in liver and mammary tissues<sup>11</sup>.

### Nootropic activity:

Nootropic activity of *Panchgavya Ghrita* (PGG) was studied using Diazepam induced amnesia in mice and Morris Water Maze (MWM) test in rat model. Piracetam was used as standard drug. *Panchgavya ghrita* successfully reversed the amnesia induced by Diazepam (1mg/kg, i.p.). The test showed significant effect of 5gm/kg dose of *Panchgavya ghrita*. Also, Piracetam and *Panchgavya ghrita* at 3.5gm/kg have significant memory enhancement action in MWM test in rats suggesting possible use of PGG as adjuvant in mental disorder treatments<sup>12</sup>.

### Wound Healing and Antiulcer activity:

A case study was done for a wound in a buffalo which did not respond to many treatments from herbal to modern responded very well to the treatment by a formulation containing Cow's ghee. Cow's *Ghrita* contains several saturated and unsaturated fatty acids which are capable of taking part in metabolic processes involved in any wound healing so it is used as wound healing properties<sup>13</sup>.

A study of wound healing activity of *Goghrita* preparation containing *Aegle marmelos* leaves and Cow's ghee showed enhanced and rapid healing. The effects produced by topical application of combination of *Aegle marmelos* leaves extract and cow ghee with reference to wound contraction, wound closure, decrease in surface area of wound and tissue regeneration at the wound site were studied.

### Eye Lubricant activity:

Computer Vision Syndrome (CVS) characterized by burning sensation, dryness, redness and itching in the eyes are related to *Netradaha*, *Netrarukshtava*, *Netralalima*, *Netrakandu* in Ayurveda. *Goghrita* (Cow ghee) is *Snehottam*. It possess properties of *Snigdha*, *Guru* and *Mrudu* and lubricating property; because of these properties *Goghrita* is very useful for vitiated pitta and *Vata Dosha* in CVS and reducing the dryness, redness and itching in the eyes<sup>14</sup>.

## Cow ghee and Diabetes

Kumar Ravi reviewed the function of Cow's Ghee in prevention and treatment of Diabetes as a Dietary complement. In this study it was concluded that the Cow's ghee components are inversely associated with Diabetes and in limited quantity it is effective in preventing and treating the diabetes and its associated complications. Cow ghee having Carotenoids, Vitamin A, D, E (antioxidants), Mg and Ca and all these substances have shown antidiabetic activity<sup>15</sup>. Animal studies have verified many helpful result of *Ghee*, inclusive of dose-dependent decreases in serum total cholesterol, low density lipoprotein, very low density lipoprotein, and triglycerides; decreased liver total cholesterol, triglycerides, and cholesterol esters; and a lower level of non-enzymatic induced lipid per oxidation in liver homogenate<sup>16</sup>. Odd chain fatty acids like Pentadecanoic acids and Heptadecanoic acid have positive effect on cardiovascular system and associated with reduced risk of Diabetes<sup>17, 18</sup>.

Cow ghee is a very good source of Conjugated Linoleic Acid (CLA) and it has proven antidiabetic effect in animal research due to complex regulation of the genes vital in reducing adiposity, improved insulin action and signal transduction in skeletal muscles. Cow ghee contains Linoleic acid which decreases inflammatory mediators such as leucotrienes, prostaglandins and interleukins. The potential of ghee to lower the levels of Arachidonic acid metabolites decrease secretion of leukotriene is also recommended in preventing the complications of Diabetes such as CVD, Atherosclerosis etc<sup>19</sup>.

## Cow Ghee helps in digestion<sup>20</sup>

Kumar et.al. studied that *Goghrita* contains butyric acid which is having short chain fatty acid gives distinct flavor and help in digestion. Beneficial microorganisms in intestine which converts fibers into butyric acid are used for source of energy and intestinal wall support. Studies have confirmed that people with unhealthy digestive tracts do not produce butyric acid. Researchers suggest that the production of killer T cells in the gut get adequate support from production of butyric acid and as a result strong immune system.

## *Ghrita kalpana* in the management of dementia

*Ghrita* is one among the best *Ajasrika Rasayana*. It is *Ayu Vardhaka*, *Vayasthapaka*, *Balavardhaka*, *Ojovardhaka*, *Dhatuposhaka* and is supreme among *Snehana Dravya*. By virtue of *Yogavahitva*, as per its ingredients the medicated *Ghrita* add on the properties of the ingredients. It is brain tonic used in *Unmada*, *Shosha*, *Kustha*, etc.

*Ghrita* has one property *Samskarasyanuvartanum* i.e. there is no other such material which imbibes the quality to the extent that *Ghrita* does. It is *Rasayana*, *Bramhana* and *Param Yogavahi*. Most Ayurvedic formulations are made with *Ghrita*. Digestion, absorption and delivery to a target organ system are crucial in obtaining the maximum benefits from any formulation. This is facilitated by *Ghrita*.

## CONCLUSION-

*Goghrita* promotes memory, intellect, and the power of digestion, semen, *Ojas*, *Kapha*, and fat. It alleviates *Vata*, *Pitta*, toxic conditions, insanity, consumption, and fever. It is the best of all the unctuous substances. It is auspicious, cold in potency, and sweet both in taste as well as *Vipaka*. When administered according to the prescribed procedure, it increases, thousand times in potency and develops manifold utilities.

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