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A Critical Review on Various Aspects And Perspectives of Vachadi Ghrita

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ABSTRACT

Vachadi Ghrita is a clarified butter belonging to the category of Ayurveda formulations is mainly used for the cure of diseases related to Central Nervous System disorders. Ghrita contains the ingredients as Cow-Ghee (Go-Ghrita),Vacha (Acorus calamus), Guduchi (Tinospora cordifolia), Shankhapushpi (Convolvulus pluricaulis), Haritaki (Terminalia chebula), Shati (Hedychium spicatum), Vidang (Embelia ribes), Shunthi (Zingiber officinale) and Apamarg (Achyranthes aspera).The use of Vachadi Ghrita and its ingredients has been well defined in ancient Ayurveda texts like Charak Samhita, Ashtang Hridaya, Bharat Bhaishajya Ratnakar and Bhav Prakash Bighantu etc. This article is aimed to gather all the scientific research findings supporting the use of Vachadi Ghrita and its ingredients in the prevention, treatment and cure of various pitta disorders and other ailments in human beings. Ingredients of Vachadi Ghrita viz. Vacha possess various pharmacological activities like digestive, antioxidant, brain tonic, anti-inflammatory properties etc. The aim is to support the pharmacological potential of Vachadi Ghrita and its ingredients with scientific results.

Keywords: *Vachadi Ghrita, Medicated ghee, Go-Ghrita, Antidepressant, Antioxidant, Alcoholism.*

1. INTRODUCTION

In order to facilitate the absorption of the active therapeutic principles of the ingredients that are intended to be included in the formulation, *Ghrita* are primarily the Ayurvedic dosage forms that are prepared according to the prescribed formula.**[1,2]** Ghee is clarified butter made from milk that is boiled with the necessary kasayas (liquid extract obtained by decoctions) and kalkas (pastes) of drugs. These lipid-based polyherbal formulations may be able to penetrate the blood–brain barrier and have advantageous effects on the brain**.[3,4]***Vachadi Ghrita* is an Ayurvedic medicine with ghee as its base that is indicated for the treatment of numerous CNS illnesses. It is also known as herbal or medicinal ghee. *Vacha (Acorus calamus)* is the major component. **[5,6]**

It is believed that the combination of various herbal medications in the manufacture of DG and the extraction of these medications' lipid-soluble extractives in Go-Ghrita (Cow Ghee) may have a cumulatively beneficial impact on psychosis and help to ward off blood-related illnesses. Go-Ghrita, the vehicle employed in the manufacture of Dhatryadi Ghrita, renders the preparation extremely lipid soluble and facilitates easy passage through the blood brain barrier. so aids in transporting active ingredients to a certain target place, in this case the central nervous system**.[7,8]** Ghee is regarded as the healthiest source of edible fat in Ayurveda**.[9]** It has therapeutic characteristics and helps the good effects of herbal medicines added to it when medicated ghee is prepared. Go-Ghrita increases longevity and safeguards the body's regular functions, as is widely known**.[10,11]**

2. Material and Methods:

Through searches on Google Scholar, MEDSCAPE, BMC, Science Direct, MEDLINE database, SCOPEMED, and other pertinent databases using keywords like Ghrita, Vacha, Ayurveda, etc., literature was examined in order to relate information on Dhatryadi Ghrita. The data was also taken from a variety of Ayurvedic treatises, Ayurveda textbooks, and Pharmacognosy literature that could be found in the libraries of Pranveer Singh Institute of Technology in Kanpur and NBRI Lucknow. Research was also done on numerous research articles and dissertations that were available.

3.Vachadi Ghrita

According to the Ayurvedic literature, each ingredient in Vachadi Ghrita includes a variety of medicinally useful properties. The Ayurvedic hypothesis claims that the final product, Vachadi Ghrita, is the result of the combined effects of these substances. Therefore, it is likely that Vachadi Ghrita is effective in treating impairment brought on by CNS illnesses**.[12,13]** The best cow-derived food, Chatushsneha, contains ghee. Ghee has the unique ability to improve both its own natural characteristics and the properties of other medications when combined with them. Among the other animals, the Ghee that comes from cows has a special significance**.[14,15]**

3.1 Ingredients of Dhatryadi Ghrita

An ayurvedic product called Vachadi Ghrita (VG) contains medicinal ghee, or clarified butter, and is suggested for enhancing cognition. The following components are found in VG:Goghrita (Cow ghee), Vacha (Acorus calamus), Guduchi (Tinospora cordifolia), Shankhapushpi (Convolvulus pluricaulis), Haritaki (Terminalia chebula), Shati (Hedychium spicatum), Vidang (Embelia ribes), Shunthi (Zingiber officinale) and Apamarg (Achyranthes aspera)**.[16]** Ancient Ayurvedic writings including Charak Samhita, Ashtang Hridaya, Bharat

Bhaishajya Ratnakar, and Bhav Prakash Bighantu, among others, have detailed the use of Vachadi Ghrita and its constituents.**[17]** The components of VG have been evaluated for a number of activities. Guduchi shown anti-oxidant action, and Vacha displayed antidepressant potential. In an experimental setting, the anti-stress, anti-anxiety, and memory-enhancing properties of Haritaki and Shankhapushpi have been evaluated. Shunthi and Vidanga both demonstrated antidepressant and neuroprotective properties. anti-oxidant, anti-depressant, and antiepileptic**.[18]**

3.1.1 Vacha (Acorus calamus)

Vacha has been utilised as a therapeutic herb for over a century in the Ayurvedic medical system. The vacha is a member of the Acoraceae family and is formally known as the Acorus calamus**.[20]** The Vacha plant is a semi-aquatic, grass-like plant that thrives in wet, marshy areas like ponds, rivers, and swamps. Due to its essential oils, the vacha plant is an aromatic herb with creeping rhizomes that has a pleasant and sweet scent.**[21]** The primary phytochemical component of vacha is -asarone. Additionally, Vacha may also contain additional phytonutrients such tannins, carotene, phytic acids, choline, flavones, ethanol, methanol, camphor, eugenol, and phenols. Vacha, as in figure 1, improves digestion, which lowers the incidence of stomach ulcers and other digestive problems**.[22]**

Figure 1: Rhizomes of Vach

3.1.2 Guduchi (Tinospora cordifolia)

Tropical areas of the Indian subcontinent are home to the Menispermaceae herbaceous vine known as Tinospora cordifolia,as in figure 2. A typical climbing shrub, it can be found on other trees. In Ayurveda, several illnesses are treated using the plant's root, stems, and leaves**.[23]** The chemical components that have been identified in this shrub come in a variety of categories, including alkaloids, glycosides, steroids, sesquiterpenoids, phenolics, aliphatic compounds, and polysaccharides**.[24]** Traditional Ayurvedic medicine has long utilised Tinospora

cordifolia to treat several conditions including fever, jaundice, chronic diarrhoea, cancer, dysentery, bone fractures, pain, asthuma, skin diseases, deadly bug bites, and eye issues**.[25,26]**

Figure 2: Plant of Guduchi

3.1.3 Shankhapushpi (Convolvulus pluricaulis)

Convolvulus pluricaulis, also known as sankhpushpi, is a perennial plant that is indigenous to India. The powerful memory enhancer and brain tonic known as Shankhpushpi, as in figure 3, also known by the names Shankhini, Kambumalini, Samkhapushpi, Sadaphuli, and Sankhaphuli—actively works to increase intelligence and brain function. The plant was given the name shankhpushpi because of its shankh or conch-shaped blooms.**[27,28]** A wide range of active ingredients, including alkaloids like shankhapushpine, convolvuline, convolidine, convolvine, convolamine, convoline, confoline, and convozine, are present in the magical herbal cure as a whole. In addition to these, it also contains rhamnose, D-glucose, maltose, sucrose, starch, and other sugars, proteins, and amino acids. It also contains volatile oils, fatty acids, fatty alcohols, hydrocarbons, palmitic, linoleic, and myristic acids, flavonoids, steroids, and phytosterols. **[29]**

Figure 3: Plant of Shankhpushpi

3.1.4 Haritaki (Terminalia chebula)

A species of Terminalia called Terminalia chebula, as in figure 4, also referred to as black- or chebulic myrobalan, is indigenous to South Asia, extending from India and Nepal to southwest China in the east and south to Sri Lanka, Malaysia, and Vietnam in the south.**[30]** A variety of glycosides, notably the triterpene arjunglucoside I, have been identified from haritaki. Chebulin, a coumarin conjugated with gallic acids, as well as other phenolic substances such ellagic acid, chebulinic acid gallicacid, ethyl gallate, luteolin, and tannic acid are other ingredients.A phenolic acid molecule called chebulic acid was discovered in the ripe fruits.**[31]** The benefits of this substance include hunger stimulation, gastrointestinal prokinetics, liver stimulation, stomachic, and moderate laxative effects. T. chebula fruit powder has been used to treat persistent diarrhoea**.[32]**

Figure 4: Fruits of Haritaki (Terminalia chebula)

3.1.5 Shati (Hedychium spicatum)

The Himalayan region is home to the plant known as shati (Hedychium spicatum), as in figure 5,also referred to as spiked ginger lily. It is a rhizomatous perennial herb that is often found in the Central and Western Himalayas at elevations of 3500–7500 feet**.[33]** Rich, wet soil and favourable weather are essential for shati plants. Withstanding temperatures as low as -2°C, it can be planted as a subtropical bedding plant in a sunny border. Beta-terpineol, limonene, beta-phellandrene, cineole, gamma-terpinene, pcymene, and linalool are the main components of shati essential oil. Starch, carbonic acid, and volatile oils are all abundant in the plant**.[34]** The rhizomes have historically been used to treat conditions such as asthma, bronchitis, fevers, hypotension, analgesia, anti-inflammatory, antimicrobial, anti-asthmatic, hypoglycemia, vasodilation, antioxidant, antifungal, pediculicidal, and cytotoxic properties.**[35]**

Figure 5 : Rhizomes of Shati (Hedychium spicatum)

3.1.6 Vidang (Embelia ribes)

Embelia is a genus of climbing shrubs that was formerly assigned to the Myrsinaceae family but is now a member of the Primulaceae. Embelin 2.5–3.1%, quercetin 1.0%, fatty substances 5.3%, the alkaloid schristembine, a resinoid, tannins, and a trace amount of volatile oils are all present in the seeds of Embelia ribes**.[36]** According to Ayurveda, Vidanga, as in figure 6, enhances the digestive system's performance and reduces flatulence, gaseous belching, and constipation. Vidangirishta, Vidanga lauha, and Vidangidi lauha are a few of the significant ayurvedic formulations of Embelia ribes Burm's vidanga**.[37]** In order to get the tape worm out of the digestive tract, vidanga is particularly helpful. In addition to this, vata disorders like facial paralysis, epilepsy, and insanity can benefit from Vidanga. Various ailments like diabetes, worm infestation, skin disorders, digestive disorders, etc. can be treated with vidanga**.[38]**

Figure 6: Fruits of Vidang (Embelia ribes)

3.1.7 Shunthi (Zingiber officinale)

Since ancient times, Shunthi (Zingiber officinale Rosc.), as in figure 7, has been employed as a medicinal plant in Ayurvedic formulations for a variety of illnesses, including Agnimandya, Amavata, Grahani, Arsha, and Vibandha Jvara**.[39]** Other pungent components include Shogaols, Paradols, Gingerdiols, Gingerdiacetates, Gingerdiones, 6-gingersulfonic acid, Gingerenones, and a number of Diarylhepatanoids, Diterpenes, and Gingerglycolipids A, B, and C. Numerous Monoterpene and Sesquiterpene Hydrocarbons and Their Oxygenated Derivatives. Additionally, it has long been used as a spice in Indian cuisine, giving it nutritional and therapeutic value, earning the designation of nutraceutical plant**.[40]** The Ayurvedic classics provided information on a variety of aspects of Shunthi, including identifying synonyms, Rasa panchaka, Karma, medicinal applications, dosage, and contraindications. It is endowed with the qualities of Katu rasa, Laghu Snigdhaguna, Ushnavirya, Madhura Vipaka, and Kaphavatahara karma.**[41]**

Figure 7: Rhizomes of Shunthi (Zingiber officinale)

3.1.8 Apamarg (Achyranthes aspera)

A plant species belonging to the Amaranthaceae family is called Achyranthes aspera, as in figure 8.. It is found all throughout the tropical world. It grows as a common weed and an invasive plant in many different locations. In some places, such as several settings on the Pacific Islands, it is an invasive species**.[42]** It produces achyranthine. Proteins and potassium are abundant in seeds. It is utilised by ayurvedic doctors in India as a cancer treatment. In addition to being helpful for haemorrhoids, indigestion, cough, asthma, anaemia, jaundice, and snake bites, apamarga has been used widely in Ayurveda as an anti-inflammatory medication. Locally, apamarg oil is used to treat earaches. In skin problems, the root powder is applied to the lesions.**[43,44]**

Figure 8 : Plant of Apamarg (Achyranthes aspera)

3.1.9 Go-Ghrita

Go-Ghrita was examined in breast cancer-causing cells, and rats' stimulated receptor- expressing of cyclooxygenase-2 and peroxisome proliferators was noted. Cow ghee is found to be protective against breast carcinogenesis in this study**.[45]** Another study found that adding ghee to the diet in amounts of 10% or less did not speed up the mechanisms involved in the peroxidation of lipid molecules. It aids in reducing the dangers of cardiovascular disease and other ailments brought on by free radicals.**[46]**

Figure 9: Go-Ghrita

4. CONCLUSION

According to the results of this investigation, vachadi ghrita has enormous pharmacological and therapeutic potential. The results of several experimental tests conducted on both humans and animals support the usage of these substances in Vachadi Ghrita. It has been demonstrated that Vachadi Ghrita and its components have antioxidant, anticonvulsant, antidepressant, antiepileptic, anticonvulsive, and nootroipc activity, among many more therapeutic benefits that have yet to be discovered.The ideas of Vachadi Ghrita are helping people increase their intelligence and memory. The majority of components have Agnideepan (increases digestive capacity) activity, Ushna (hot) potency, and Katu (pungent) flavour. As a result, Vachadi Ghrita, a chemical formulation, may have the ability to improve cognitive abilities in people and be helpful in the treatment of cognitive problems.

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