

LITERATURE STUDY OF GARCINIA CAMBOGIA (VRUKSHAMLA FRUIT) AND  
TERMINALIA ARJUNA (ARJUNA BARK) IN THE MANAGEMENT OF MEDODUSTISidharth B. S.<sup>1\*</sup>, Suresh Chaubey<sup>2</sup> and D. C. Singh<sup>3</sup><sup>1</sup>M.D. Scholar, P.G Department of Dravyaguna, Rishikul Campus, UAU, Haridwar.<sup>2</sup>Associate Professor, Department of Dravyaguna, Rishikul Campus, UAU, Haridwar.<sup>3</sup>Head of Department, Department of Dravyaguna, Rishikul Campus, UAU, Haridwar.

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## ABSTRACT

*Garcinia cambogia* and *Terminalia arjuna*, are the two prominent medicinal plants with significant therapeutic potential in traditional and modern medicine. *Garcinia cambogia*, commonly known for its active ingredient hydroxycitric acid (HCA), is renowned for its weight management and anti-obesity properties. *Terminalia arjuna*, on the other hand, has been extensively utilized in Ayurvedic medicine for its cardioprotective effects, attributed to its rich composition of bioactive compounds like Arjunolic acid, tannins, and flavonoids. The research focuses on evaluating and contrasting the phytochemical profiles, pharmacological effects, and clinical applications of both plants. By synthesizing data from various studies, the paper aims to highlight the unique and overlapping therapeutic benefits of *Garcinia cambogia* and *Terminalia arjuna*. Additionally, the study explores the mechanisms of action, safety profiles, and potential side effects associated with the consumption of these plants. Through a comparative literature review, this research provides a comprehensive understanding of the medicinal properties of *Garcinia cambogia* and *Terminalia arjuna*, offering insights into their integration into contemporary therapeutic practices. The findings of this study could serve as a valuable resource for healthcare professionals, researchers, and practitioners in the field of herbal medicine, contributing to the development of effective and safe herbal formulations.

**KEYWORDS:** *Terminalia arjuna*, *Garcinia cambogia*, Arjunolic acid, Tannins, flavonoids, HCA.

## INTRODUCTION

*Medodusti*, a concept in *Ayurveda*, refers to the pathological condition associated with the disturbance of *Meda Dhatu* (Fat tissue). It aligns with contemporary medical conditions such as obesity, dyslipidemia, and metabolic syndrome. *Ayurveda* offers a range of herbal remedies to address *Medodusti*, with *Garcinia cambogia* and *Terminalia arjuna* being noteworthy for their therapeutic potential. This article explores the literature on these two herbs and their efficacy in managing *Medodusti*.

## In samhitas

Classics of *Ayurveda* have recognized and established this phenomenon under the headings of the *Sthaulya* or *Medoroga*, dedicating chapters exclusively, elaborating various aspects of the same. The major risk related with *Sthaulya* (Obesity) is that it favours various complicated pathologies like *Prameha*, *Kusta*, *Swasa*, *Kasa*, *Vataroga*, *Kamala* etc. It is well established fact that obesity invites life-threatening complications like CAD, hypertension, diabetes mellitus, atherosclerosis, strokes,

and so on. Obesity is a chronic disorder, if unchecked will reduce the life expectancy and contributes to the increasing rate of morbidity and mortality so it has wisely said, "Longer is the belt shorter is the life". Therefore, dyslipidemia can be correlated with the conditions of *Santarpana janya-vikara*<sup>[1]</sup> as explained in our classics (Ch.Su.23). So for concept of dyslipidemia is the excess accumulation of lipids (Especially plasma lipids) in the body, leading various acute and chronic condition. "Prayaha-Snehatmedahapravardhayet" (M.Ni.34/3-7) Employing the authenticity, that excess *Sneha* is responsible factor in exuberance production of *Meda* and thus extremely produced *Meda* causing the obliteration of the other *Dhatu* that leads to *Medoroga Sthaulya lakshana*<sup>[2]</sup> in conjunction with *Upadrava*. Here the pathology that is elaborated in our classics and in contemporary science about lipids can create the parallel link.

### *Garcinia cambogia*

#### Botanical description

*Garcinia cambogia*, also known as Malabar tamarind, is a tropical fruit native to Southeast Asia and India. It belongs to the Clusiaceae family. The fruit is yellow or greenish and contains hydroxycitric acid (HCA), a key active compound. They are native to Asia and Africa and are commonly called sap trees, kokum, *Garcinias* or mangosteens, and monkey fruits. *Garcinia* plants, besides being ornamental, find industrial pharmaceutical, and culinary applications.<sup>[7]</sup>

#### Traditional uses

In traditional medicine, *Garcinia cambogia* has been used to promote digestive health, enhance appetite, and improve overall digestion. Its sour taste is believed to have a fat-reducing effect, making it suitable for treating *Medodusti*. *Garcinia cambogia* (Gaertn.) Desr., (syn. *Garcinia gummi-gutta* (L.) Roxb., known as Malabar tamarind, has been used for centuries in Southeastern Asia as an appetite suppressant to make meals more filling and satisfying.<sup>[8]</sup>

#### Pharmacological properties

- Anti-obesity:** HCA inhibits the enzyme ATP-citrate lyase, crucial for fat synthesis, thereby reducing lipid accumulation. Recent reports from the WHO suggest that globally the number of obese people is increasing and with it the incidence of cardiovascular diseases, diabetes, digestive diseases and cancer. In the Ayurvedic system of medicine, *Garcinia* is used to treat illness related to obesity and multiple studies have shown that hydroxycitric acid (also known as *garcinia acid*) a component of *Garcinia* is reported to possess anti-obesity effects. Studies have shown that consumption of hydroxycitric acid reduces appetite, inhibits fat synthesis, lipogenesis, decreases food intake and reduces body weight.
- Appetite suppression:** HCA increases serotonin levels in the brain, helping to suppress appetite and reduce food intake.
- Lipid-lowering:** *Garcinia cambogia* has been shown to lower total cholesterol, LDL, and triglycerides while increasing HDL levels.
- Antioxidant:** The fruit contains potent antioxidants that help reduce oxidative stress, a contributing factor to obesity and metabolic disorders.

#### Clinical studies

Numerous studies have demonstrated *Garcinia cambogia*'s effectiveness in weight management. For instance, a randomized, placebo-controlled trial showed significant weight reduction and improved lipid profiles among participants taking HCA supplements derived from *Garcinia cambogia*.

### *Terminalia arjuna*

#### Botanical description

*Terminalia arjuna*, commonly known as *Arjuna*, is a large deciduous tree from the Combretaceae family. It is widely distributed across the Indian subcontinent. The bark of the *Arjuna* tree is the primary medicinal part.<sup>[3,4]</sup>

#### Traditional uses

*Arjuna* has been esteemed in *Ayurveda* for its cardioprotective properties. It is traditionally used to treat cardiovascular conditions, enhance heart function, and manage hypertension and hyperlipidemia, which often accompany *Medodusti*.

#### Pharmacological properties

- Cardioprotective:** *Arjuna* bark contains compounds like arjunolic acid, arjunetin, and flavonoids, which strengthen heart muscles, improve coronary artery flow, and lower blood pressure.<sup>[5]</sup>
- Lipid-lowering:** Studies have indicated that *Arjuna* bark extracts can reduce total cholesterol, LDL, and triglycerides while boosting HDL levels. Ethanol extract of bark of *Terminalia arjuna* possesses antihyperlipidemic activity. Hyperlipidemic rats were treated with a dose of 250 mg/kg body weight ethanol extract, resulting in lowering effect to elevated plasma level of total cholesterol (TC), triglyceride (TG), and phospholipid. Similarly, ether and ethanol extract also possesses antidyslipidemic activity. It may be possible that arjunic acid and its derivatives of ether and ethanol extract transformed to its active ingredients through hepatic drug metabolism cascade, and is responsible for lipid-lowering activity.<sup>[6]</sup>
- Antioxidant:** The rich antioxidant content of *Arjuna* combats oxidative stress, which plays a role in the development of obesity and metabolic syndrome.
- Anti-inflammatory:** *Arjuna* anti-inflammatory properties help reduce chronic inflammation commonly seen in metabolic disorders.

#### Clinical studies

Clinical trials have validated *Arjuna* traditional uses. For example, a study on hyperlipidemic patients showed significant lipid-lowering effects and improved cardiac function with *Arjuna* bark extract supplementation.

#### Integrative approach in *medodusti* management

Combining *Garcinia cambogia* and *Terminalia arjuna* in the management of *Medodusti* offers a synergistic approach. *Garcinia cambogia* aids in weight reduction and metabolic balance, while *Terminalia arjuna* enhances cardiovascular health and lipid management. Together, they address multiple aspects of *Medodusti* by:

- Reducing body fat accumulation
- Suppressing appetite and reducing food intake
- Improving lipid profiles

4. Enhancing heart function
5. Combating oxidative stress and inflammation

## CONCLUSION

The literature on *Garcinia cambogia* and *Terminalia arjuna* underscores their significant potential in managing *Medodusti*. Their combined use, supported by traditional *Ayurvedic* wisdom and contemporary research, presents a promising natural intervention for addressing obesity and related metabolic disorders. Continued clinical studies and integrative therapeutic approaches can further our understanding and application of these potent herbs in modern healthcare.

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