Pharmacological Review of *Pazhampuli* (*Garcineagummi-cutta*)-A Herbal Drug

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**Abstract:** *Garcineagummi-cutta* has been used in South India from time immemorial as a condiment for flavouring curries in place of tamarind or lime. *G.gummi-cutta* is mostly used in Kerala and Kanyakumari district of Tamil Nadu in cooking to add sour taste to fish curry. It is also used to preserve dry fish. The polyisoprenylated benzophenone and xanthone derivatives are known for their antioxidant, apoptotic, anti-cancer, anti-inflammatory, antibacterial, anti-viral, anti-fungal, anti-ulcer and anti-protozoal properties. The Hydroxycitric Acid content of *garcinia* gummi-cutta reduce net fat deposition from denovolipogenesis during weight gain and it also reduces food intake resulting in weight reduction. It also alters serum lipid profile. Currently it is marketed as an anti-Obesity drug. There are so many studies for and against its medicinal properties. So, a thorough pharmacological and clinical evaluation of the drug is the need of the hour.

**Key words:** Hydroxycitric Acid • Anti-obesity • Total cholesterol • LDL-cholesterol • Cardio tonic • Antioxidant • Polyisoprenylated benzophenone

**INTRODUCTION**

Siddha medicine is one of the most ancient medical systems of India. Siddha is the mothermedicine of ancient Tamils/Dravidians of peninsular South India. The word Siddha means established truth. The people who were associated with establishing such a school of thought were known as Siddhars. They recorded their mystic findings in medicine, yoga and astrology in Tamil [1]. Any how Siddha advocates the use of *Pazhampuli* meaning ancient tamarind in the diet of the sick. Till recently contemporary texts explained *Pazham Puli* as old stock of commonly used tamarind. Recent ethno-pharmacognostical and literary research work established that *Pazhampul* refer to the fleshy rind of *Garcineagummi-cutta* [2]. Vernacular names for *Garcineagummi-cutta* in Kerala and Kanyakumari district of Tamil Nadu are *Korukkapuli, Kodakapuli, Pathyapuli, Malabarpuli* etc. [3]

It is interesting to note why Siddha literature calls *Garcineagummi-cutta* as *Pazhampuli*. The commonly used tamarind plant (*Tamarindusindicus*) is said to be indigenous to Africa and was introduced to India [4]. As red chillies, peanut and cashew tamarind also became very popular with Indians in course of time. Before tamarind became popular *Garcineagummi-cutta* was the major source to give sour taste to food in Indian cooking and was called *Puli* i.e. tamarind. The new tamarind replaced to a large extent the hither to used *Garcineagummi-cutta*. In course of time *Garciniagummi-cutta* was outdated in day today cooking and came to be called *Pazhampuli* meaning old tamarind. So the medicinal properties and uses attributed to *Pazahmpuli* actually denote those of *Garcineagummi-cutta*.

*Garciniagummi-gutta* (L) Robs. Previously known as *Garciniacambogia* (Gaertn) Desr. belongs to family Clusiaceae. Medium sized tree with drooping branches. Leaves are dark green, shining, elliptic-obovate. Male flowers are fascicled; female flowers solitary. Berryovoid, yellow or red when ripe with 6-8 grooves [5]. *Pazhampuli* consists of dried rind of *Garciniagummi–cutta*. The ripe fruit is halved or sectioned and spread in thin layers, dried in the sun for three to seven days to moisture level of about 15 to 20 percent and smoked [6].

**Phytochemistry:** Rich in acids, Hydroxycitric Acid (HCA), lactone, garcinol, isogarcinol, cyanidin-3 sambubioside, phenolic flavonoids, carbohydrates, proteins, steroids, trepenoids, cardiac glycosides, phlobotannins.

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**Uses:** It has been used in South India from time immemorial as a condiment for flavouring curries in place of tamarind or lime. Thas and Pazham Puli [4] Siddha Materia Medica mentions that *Garcinia gummi-cutta* has no adverse effects, it relieves diseases caused by derangement of Three Faults, relieves fever, vomiting, eye and liver diseases. *G. gummi-cutta* is an antidote for venomous bites including cobra and scorpion sting. It has wound healing properties. It can also be added to the diet of patients undergoing treatment for skin conditions. In this respect it is just opposite to the conventional tamarind which should be avoided in sick regimen of patents. Tamarind is considered an *Apathyapathartha*. Extensive details are given regarding the process of *G. gummi-cutta* before it is added to diet or drugs as an ingredient. *G. gummi-cutta* is mentioned as an ingredient of several drug preparations also. The fruit juice is claimed to have anti-scorbutic, anthelmintic and cardiotonic properties. It finds application in the treatment of piles, dysentery, tumours, pains and heart complaints [7].

**Contemporary Relevance:** *G. gummi-cutta* is mostly used in Kerala and Kanyakumari district of Tamil Nadu in cooking to add sour taste to fish curry. It is also used to preserve dry fish. The polyisoprenylated benzophenone and xanthone derivatives are known for their anti-oxidant, apoptotic, anti-cancer, anti-inflammatory, antibacterial, anti-viral, anti-fungal, anti-ulcer and anti-protozoal properties [6]. The Hydroxycitric Acid (HCA) has been known for its hypo-lipidemic property. Of late Hydroxycitic Acid is marketed for its anti-obesity properties. Evidences to anti-obesity effect are based mostly on animal models. Several biochemical mechanisms are postulated to consolidate these claim [8]. A study claims that Hydroxycitric Acid may reduce net fat deposition from denovolipogenesis during weight gain and it also reduces food intake resulting in weight reduction. Some clinical studies also showed that there is a significant reduction in Body Mass index, food intake, Total cholesterol, LDL, Triglycerides and Serum leptin levels and enhanced excretion of urinary fat metabolites [9-14]. However, some clinical trials do not support the claims that *Garcinia gummi-cutta* is an effective weight-loss aid [15-18]. A meta-analysis found a possible small, short-term weight loss effect (Under 1 kilogram) [9]. Further studies are required to come to a definite opinion about the usefulness of *G. gummi-cutta* as a weight reducing agent.

**Other Actions of *G. gummi-cutta***: Anti-inflammatory, anti-thrombotic, ant-oxidant and post prandial hypoglycaemic effects have been demonstrated in animal models [19-21].

**Adverse Effects:** *Garcinia gummi-cutta* is a diet and drug used by people from time immemorial. It may be safe when used in the traditional way. However when phytochemicals from the plant are used their safety profile has to be established before human use. Nearly 17 clinical studies have proved the safety of *garcinia* and its derivatives [22].

**Dosage:** Dietary dosage of up to 2800 mg/day was considered safe [23].

**CONCLUSION**

This ancient drug that has stood the test of time needs further evaluation. Anti-emetin, anti-dotal, anti-pyretic actions as mentioned in Siddha literature need further studies. The beneficial effects of using *G. gummi-cutta* in the diet regimen of skin patients and wound healing properties also need evaluation. Siddha Medicine claims *G. gummi-cutta* is useful in all human ailments. So a thorough pharmacological and clinical evaluation of the drug is the need of the hour.

**REFERENCES**