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A PHYTO-PHARMACOLOGICAL REVIEW ON SIDDHA HERBOMINERAL FORMULATION *MANIMANDHIRATHI CHOORANAM* FOR *GUNMAM* (ACID PEPTIC DISORDERS)

A. Girija*[1], S. Sushma[2], M. Jagadeeshbabu[3], S. Matheshvaran[4] and M. D. Saravana Devi[5]

[1,23,4]PG Scholar, Post Graduate Department of Gunapadam (Siddha Pharmacology), Government Siddha Medical College, The TamilNadu Dr.M.G.R. Medical University, Chennai, Tamil Nadu, India.

[5]Head of the department, Post Graduate Department of Gunapadam (Siddha Pharmacology), Government Siddha Medical College, The TamilNadu Dr.M.G.R. Medical University, Chennai, Tamil Nadu, India.

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***Corresponding Author**
Dr. A. Girija
PG Scholar, Post Graduate Department of Gunapadam (Siddha Pharmacology), Government Siddha Medical College, The Tamil Nadu Dr. M.G.R. Medical University, Chennai, Tamil Nadu, India.

ABSTRACT

Siddha medicine is one of the Indian systems of medicines practiced widely in the southern part of India. Siddha system of medicine elaborates the disease based on the three vital humor (*Vadham, Pitham, Kabam*). *Gunmam* is one of the diseases that occurs due to interruption of Vadham. In modern science, *Gunmam* is similar to Acid peptic disorders. Peptic ulcer disease affects 4 million people worldwide annually and has an estimated prevalence of 5-10% in the general population. A lot of medicines have been mentioned in Siddha literature that includes herbals, metals, minerals and animal products. Among them a herbomineral formulation named *Manimandhirathi chooranam* mentioned in *"Agasthiyar Mani 4000 ennum vaithiya sinthamani venba Muthal pagam",* Page No-192, indicated for *Gumam, Soolai, Moolam, Vayitru noi*. This brief review focused on phytochemicals, chemical constituents and pharmacological properties of all its ingredients for *Gunmam.*

KEYWORDS: *Siddha, Manimandhirathi chooranam,* Phyto-pharmacological properties, *Gunmam.*

INTRODUCTION

Peptic ulcers are the areas of degeneration and necrosis of gastrointestinal mucosa exposed to acid-peptic secretions. Constant physical or emotional stress, food with excess spices, smoking & alcohol consumption, chronic inflammation due to *Helicobacter pylori* infection, hyperacidity of gastric juice, reduced alkalinity of duodenal content, long term use of NSAIDs drugs are the major causes of peptic ulcer disease. It possesses symptoms like dull pain, burning, fatigue, heartburn, loss of appetite, nausea, vomiting, bloating, burping, weight loss. In Siddha, It refers to *Gunmam.*[1-7]

In Siddha, various medicines were prescribed for *Gunmam*. Among them "*Manimandhirathi chooranam*" for *Gunmam*(Acid Peptic Disorders) mentioned in *"Agasthiyar Mani 4000 ennum vaithiya sinthamani venba Muthal pagam",* Page No-192, have been reviewed. The formulation consists of 7 drugs. This review exposes Manimandhirathi chooranam's all the ingredient's phytochemicals along with its pharmacological properties related to *Gunmam* were documented.

Table No. 01: Ingredients of MMC and its quantity.

S.No	Name of the drug	Scientific name	Quantity
1.	*Indhuppu*	*Sodium chloride impura salt*	*1 varagan (4.2 gm)*
2.	*Seeragam*	*Cuminum cyminum*	*2 varagan (8.4 gm)*
3.	*Asamadha omam*	*Carum copticum*	*3 varagan (12.6 gm)*
4.	*Sukku*	*Zingiber officinale*	*4 varagan (16.8 gm)*
5.	*Thippili*	*Piper longum*	*5 varagan (21 gm)*
6.	*Milagu*	*Piper nigrum*	*6 varagan (25.2 gm)*
7.	*Kadukkai*	*Terminalia chebula*	*21 varagan (88.2 gm)*

Drug Preparation

All the ingredients were taken in the mentioned quantity and pounded into fine powder. Sieved the powder in a thin cotton cloth, then stored in a clean glass air-tight container.

DRUG ADMINISTRATION

Form of the medicine: *Chooranam*

Route of Administration: Oral route

Dose: 1 to 2 gram, twice a day

Adjuvant: Warm water

Indication: ***Gunmam***, *Soolai, Moolam, Vayitru noi*

Rock salt - Sodium chloride impura[8]

Fig. No: 1 - Sodium chloride impura.

Occurence: It is a very common mineral and found in sedimentary rocks of all ages and widely distributed throughout the world. Rock salt occurs in extensive but irregular beds in rocks of various ages associated with gypsum, clay, calcite and sand stone. In India in Punjab, enormous deposits are present.

Appearance: Rocksalt is generally granular in structure and commonly variously colored by impurities.

Common name - Rock salt

Chemical Name - Sodium chloride

Formula - NaCl (Sodium 39.4, Chlorine 60.6)

Physical properties[15]

Color - Colorless, white, reddish purplish and Bluish

Taste - Saline

Group - Chloride mineral

Geo name - Halite

Cleavage - Cubic

Luster - Vitreous

Hardness - 2.5

Diaphaneity - Transparent to translucent

Chemical composition: Commonly mixed with calcium sulphate, calcium chloride, magnesium chloride and magnesium sulphate.

Medicinal uses: It aids in digestion by stimulating digestive fire, balances natural production of HCl and is prescribed for laxative and digestive disorders. It improves appetite, removes intestinal and abdominal gases, cramps and soothens heartburn.

***Cuminum cyminum*[9]**

Fig. No. 2: *Cuminum cyminum.*

Botanical classification

Kingdom : Plantae

Division : Magnoliophyta

Class : Magnoliopsida

Order : Apiales

Family : Apiaceae

Genus : Cuminum

Species : *Cuminum cyminum*

Habitat : An annual plant cultivated from low elevations in the warm temperate to higher elevations in tropical zones.

Parts used: Seed

Chemical constituents: Cuminaldehyde, Myrcene, terpinen, thujene, p-Cymene, Sabinene, terpineol, linalyl acetate, Geraniol, thymoquinone, phellandral, o-cymene, dithymoquinone.

Pharmacological properties[16,28,30,32]: Antiulcer, Anti-microbial, Anti-oxidant, Antiinflammatory, Analgesic, Anti-cancer.

***Carum copticum*[10]**

Fig. No. 3: *Carum copticum.*

Botanical classification

Kingdom : Plantae

Division : Magnoliophyta

Class : Magnoliopsida

Order : Apiales

Family : Apiaceae

Genus : Trachyspermum

Species : *Carum copticum*

Habit : It is a perennial plant cultivated in arid and semiarid fields in different regions of central Europe, Asia, India, Iran, Afghanistan, Pakistan, Iraq.

Parts used : Seeds

Chemical constituents: Carvacrol, γ-terpinene, o-cymene, β-pinene, thymol, terpinolene, linoleic acid, oleic acid, xylene, palmitic acid, p-cymene, limonene, myrcene.

Pharmacological properties[17]: Gastrointestinal, antiparasitic, antimicrobial and antispasmodic activities,

***Zingiber officinale*[11]**

Fig. No: 4 - *Zingiber officinale.*

Botanical classification

Kingdom: Plantae

Division : Magnoliophyta

Class : Liliopsida

Order : Zingiberales

Family : Zingiberaceae

Genus : Zingiber

Species : *Zingiber officinale*

Habitat[18]: It is a herbaceous plant with an underground stem. These herbs possess tuberous, horizontal and aromatic rootstocks. It occurs naturally in Pacific islands and is widely cultivated in different countries.

Parts used: Rhizome

Chemical constituents: Contains volatile oil in 1-3% of its weight. The sequesterpenes, Bisalpolene, zingiberene, zingiberol are the active components of ginger oil.

Pharmacological properties[19,26,27]: Aromatic, Carminative, stimulant of GIT, antispasmodic, digestive activities.

***Piper longum*[12]**

Fig. No. 5: *Piper longum.*

Botanical classification

Kingdom: Plantae

Division : Magnoliophyta

Class : Magnoliopsida

Order : Piperales

Family : Piperaceae

Genus : Piper

Species : *Piper longum*

Habit[20]: It has slender, aromatic, perennial climber, with woody roots and numerous wide ovate, cordate leaves. The native of plant is considered to be South Asia and is found both wild as well as cultivated, throughout the hotter parts of India from central to the north-eastern Himalayas.

Parts used : Fruit

Chemical constituents: Fatty acids found in fruit are Palmitic, hexadecenoic, stearic, linoleic, oleic, higher saturated acids, arachidic, and behenic acids. Alkaloids present in the fruit are piperine, together with methyl piperine, iperonaline, piperettine, asinine, pellitorine, piperundecalidine, piperlongumine, piperlonguminine, refractomide A, pregumidiene, brachystamide, brachystamide-A, brachystine, pipercide, piperderidine, longamide and tetrahydropiperine, tetrahydro piperlongumine, dehydropipernonaline piperidine, piperine, tetrahydro piperlongumine and tri methoxy cinnamoyl-piperidine. Volatile oils present in the fruits are caryophyllene and pentadecane (both about 17.8%) and bisabolene (11%).

Pharmacological properties[21]: Antiulcer, Antioxidant, Analgesic, Insecticidal and acaricidal, Antifungal, Antiamoebic, Antimicrobial, Anti-inflammatory, Immunomodulatory, Hepatoprotective activities.

***Piper nigrum*[13]**

Fig. No. 6: *Piper nigrum.*

Botanical classification

Kingdom: Plantae

Division : Magnoliophyta

Class : Magnoliopsida

Order : Piperales

Family : Piperaceae

Genus : Piper

Species : *Piper nigrum*

Habit[22]: The perennial climbing shrub is indigenous to Malabar and Travancore coasts,i.e, western coasts of India.

Parts used : Dried unripe fruit

Chemical constituents: Piper nigrum contains Piperine, pipene, piperidine and piperazine. piperidine, (2E,4E)- Nisobuty- ldecadienamid, isobutyl octadecenamide, Tricholein, Trichostachine, isobutyl eicosatrienoic, Isobutyl-octadecenamide, Piperettine, Pipericide, Piperolein B, Sarmentine, Sarmentosine, Retrofractamide.

Pharmacological properties[23,31]: GI stimulant, bioavailability enhancer, anti inflammatory, Antifungal, antibacterial, insecticidal, hepatoprotective, antidiarrheal, lipid metabolism accelerator, anticancer activities.

***Terminalia chebula*[14]**

Fig. No. 7: *Terminalia chebula.*

Botanical classification

Kingdom: Plantae

Division : Magnoliophyta

Class : Magnoliopsida

Order : Myrtales

Family : Combretaceae

Genus : Terminalia

Species : *Terminalia chebula*

Habitat[24]: This tree is wild in the forests of Northern India, Central Provinces and Bengal, common in Madras, Mysore and in southern parts of Mumbai.

Parts used : Dried fruits, immature fruits, the outer skin of the fruits.

Chemical constituents: Chebulic acid, chebulinic acid, chebulagic acid, gallic acid, corilagin and ellagic acid are the tannin present in fruits of T.chebula. Phytochemicals like anthraquinones, ethanedioic acid, sennoside, 4,2,4 chebula-d'glucopyranose, terpenes and

terpinenols are present. Triterpenoids and their glycosides have been isolated from stem bark of *T. chebula*.

Pharmacological properties[25,29,33]: Antiulcerogenic, Antimicrobial, Antibacterial, Antifungal, Antiamoebic, immunomodulatory, Antiplasmodial, Anthelmintic, Antiviral, Antimutagenic, anticarcinogenic, antioxidant, Wound healing and protective effects on various vital organs such as nerves, heart, kidney and liver.

CONCLUSION

Each ingredient of the formulation is easily available and less cost effective. As a *chooranam*, it can be easily prepared at any time and easily consumed by the patients. From this review, all the ingredients possess Anti-ulcer, Antispasmodic, Anti-inflammatory, Antioxidant activities and gastroprotective effects that expose its safety and efficacy in a scientific manner. Though a huge number of medicines are available for *Gunmam,* the drug *Manimandhirathi chooranam* is one of the best drugs to be given to the patients.

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