

REVIEW OF SIDDHA SASTRIC FORMULATION KARASOODA SATHU PARPAM METHOD I, A HERBOMINERAL DRUG IN THE MANAGEMENT OF KALLADAIPPU (RENAL CALCULI).**P. Sharmila*¹, H. Vetha Merlin Kumari², S. Mohan³ and Meenakumari R.⁴**

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ABSTRACT

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Siddha system of medicine is the most primitive medical system. This system was formulated and established about more than 5000 years back by the eminent powers called Siddhars and hence the name Siddha Medicine. Siddhars have classified 4448 diseases, based on the three humoral pathologies. Among them kalladaippu is placed under Neerinaai Arukkal noi (Oligurial diseases). It is caused due to derangement of pitha humour. Urolithiasis affects about 12% of the world population at some stage in their life time. It affects all ages, sexes, and races, but occurs more frequently in men than in women within the age of 20–49 years. However, lifetime recurrence rate is higher in males, although the incidence of nephrolithiasis is growing among females. Many formulations are indicated for kalladaippu noi

(Renal calculi) in siddha literature, karasooda sathu parpam one among them a herbomineral formulation indicated for kalladaippu in siddha sastric text. Hence this article gives an insight on the efficacy of the drug karasooda sathu parpam renal calculi based on review of various literatures and scientific studies.

KEYWORDS: Herbomineral drug, Siddha, Renal calculi, Karasooda sathu parpam,

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Kalladaippu.

INTRODUCTION

Siddha system of medicine is an age old traditional system with unique properties in not only treating a disease but gives us an immense perception and approach to lead a healthy life. Siddhars are the spiritual scientists and they have classified diseases into 4448 numbers.^[1] Kalladaippu is one among them. The clinical features of kalladaippu can be correlated with Urolithiasis in biomedicine. Urolithiasis is a term originated from three Greek words, 'ouron' for urine, 'oros' for flow, and 'lithos' for stone. It is the process of forming stones in the kidney, bladder and/or urethra and is a complex phenomenon yet not clearly understood. Urinary calculi are the third most prevalent disorder of the urinary system.^[2] Kidney stone formation or urolithiasis is a complex process that is a consequence of an imbalance between promoters and inhibitors in the kidney.^[3] By proper intake of diet and other lifestyle modification, we try to alter the chemical balance by increasing the stone inhibiting factor. Supersaturation of urine with stone-forming chemicals is a prerequisite for stone formation.^[4] Nephrolithiasis is a stand out amongst the most widely recognized urinary tract diseases. Current studies estimate the prevalence of renal stones in the United States (US) populace, 7.1% in women, while 10.6% in men. Over the last several decades, the lifelong danger of systemic stones has increased.^[5] Nephrolithiasis, or Renal stones, are common worldwide. Renal stones are the major cause of mortality and morbidity. With its prevalence, increasing continuously, they have a significant economic burden for both developing and urbanized countries. Prevalence of life-threatening complication due to nephrolithiasis is 12%. It is suggested that nephrolithiasis can develop in association with systematic disorders such as diabetes mellitus (Type II), dyslipidemia, obesity, and hypertension. Its geographic locations such as in parts of the United States, South Africa, India and South- East Asia.^[6] Dehydration from low fluid intake is a major factor in stone formation. High dietary intake of animal protein, sodium, refined sugars, fructose, high fructose corn syrup, oxalate and grapefruit juice may increase the risk of kidney stone formation.^[7] The study drug karasooda sathu parpam is a herbomineral drug and the ingredients like Vengaram(*Borax*), Karpoora Silasathu(*selenite*), Lemon juice(*citrus limon.Linn*) are strongly indicated for urolithiasis. Here this article gives an insight on the efficacy of the drug karasooda sathu parpam renal calculi based on review of various literatures and scientific studies.

MATERIALS AND METHODS

The Ingredients of Karasooda Sathu Parpam

Purified Vengaram (<i>Borax</i>)	- 1 Palam(35 gm) ^[8]
Purified Karpooora Silasathu(<i>selenite</i>)	- 1 palam(35 gm) ^[8]
Lemon juice(<i>citrus limon. Linn</i>)	- Require qty.

Purification of Vengaram^[9]

1 Palam (35 gm) of Vengaram was fried till the moisture gets removed.

Purification of karpooora silasathu^[10]

1 palam(35 gm) of silasathu was powdered and soaked in 2 part of tender coconut water for 24 hrs. It was then filtered and dried. This process was repeated 2 times.

Method of Karasooda Sathu Parpam Preperation^[11]

35gm of vengaram and 35gm silasathu were purified separately and it combination has been grinded with lemon juice for 6 hrs and then made into tablets(villai). These tablets were dried in sunlight and then put into mud lid and surmounted an equivalent mud lid and sealed by clay plaster winded it for 2 times and then burnt using varрати(dried cow dung) and allowed it to cool. Finally the mud lid was taken out and seal was opened to collect the leftover available in the lid. This leftover was grinded as fine powder. This powder karasooda sathu parpam was stored in closed container.

TREATMENT REGIMEN

Drug: KARASOODA SATHU PARPAM

Dose: 720 mg (twice a day)

Duration: 48 days

Vehicle: Honey

Sastric Formulation of The Ingredients Of Karasooda Sathu Parpam In The Management of Kalladaippu (Renal Calculi)

S.no	Name of The Ingredients	Strengths As In Siddha Literature	Strengths as Per In Scientific Validation
1	Vengaram(<i>Borex</i>)	Diuretic, Lithotriptic	Anti Inflammatory ^[12]
2	Karpoora silasathu(<i>gypsam</i>)	Diuretic, Lithotriptic	Anti inflammatory ^[13] Anti nociceptive ^[13] Anti microbial ^[14] Diuretic ^[15]
3	Elumichai(<i>citrus limon.Linn</i>)	Diuretic, Stomachic and Carminative antiscorbutic and refrigerant. Helpful in pitha disease	Anti nociceptive ^[16] Anti microbial ^[17] Anti urolithiatic ^[18]

MINERALOGICAL REVIEW

1. BORAX (VENGARAM)^[11]



Borax (sodium borate) is a naturally occurring mineral composed of sodium, boron, oxygen and water.

Tam : Vengaram, Venkaram

Eng : Sodium Biborate, Borax

Sans : Tankana

Tel : Velligaram

Mal : Ponkaram

Vengaram has sweet and astringent taste. when taken internally it has coolant, diuretic, lithothiptic, emmenagogue activities. On external use it has emollient, antiseptic and astringent activities.

“Vengaram sethumathai verupannumae kadugu

Thangusila neermuriya thaana vaangum"^[11]

It relieves kaba and urinary disease.

Source

It occurs as a natural deposit. Crude borax is found in masses by evaporation of water, on shores of dried up lakes in India and Tibet.

Potency

Hot

Division

Pungent

Physical Properties of Vengaram

Chemical Formula : $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$

Composition : Hydrated sodium borate

Colour : Colourless, white, light grey. Also in light tints of blue, green and yellow.

Streak : White

Hardness : 2 - 2.5

Transparency : Transparent to opaque

Specific Gravity : 1.7

Luster : itreous to dull

Other ID Marks

1. Has a sweetish, metallic taste
2. Dissolve in water

In Group

Borates; Hydrated Borates

Borax healing and preventative properties

Borax protects against the accumulation of fluorides in the body; is effective as an antidote in fluoride toxicity; and can remove fluorides from the body.

Anti-microbial

Borax is toxic to insects, parasites, protozoa and bacteria.

Fungicide

Effective against moulds and fungi, internally and externally.

Immune system enhancer

Promotes healing of wounds. Reduction and control of inflammation.

Toxin removal

- Protection from heavy metals.
- Stabiliser of calcium, silicon, copper and magnesium levels, inhibits calcification. Boron sufficiency normalises calcium levels, preventing both abnormal calcium deposition and bone weakness.

Cancer

Boron may be a preventative for prostate cancer.

Antiseptic

Very effective for bladder infection and urinary tract infection.

Medicinal Uses

- Vengara parpam cures pitha disease like burning micturition and kalladaippu. Borax is given internally in doses varying from 10-30 grains in acidity of stomach, dyspepsia and intestinal organism. It commonly mixed in decoction for kalladaippu.
- In small doses it is given to children as a laxative.
- It is also used in loss of appetite, painful dyspepsia, cough, asthma and diarrhea. Externally borax is used in lotion in acne, freckles, chloasma.
- Boro-glycerine is useful as an antiseptic lotion in purulent ophthalmia and diphtheria.

1) The Vengaram is one of the ingredients of the drug jalamanjari chendooram is an effective and significant hyponatraemic, hypochloraemic, hypokalaemic and diuretic activity is present.



2. Gypsum (*Karpooora Silasathu*)^[11]

English : Asphalt; Mineral pitch; Plaster of paris

Hindi : Silajita

According to siddha literatures karpooora silasathu has diuretic, lithotriptic, astringent and styptic activity.

*“Kalladaippu megam gana thoolam vithirathy
Solladaikku neerarugal sonithakkaan”*^[11]

Karpooora silasathu is indicated for urolithiasis, obesity and urinary tract infections.

Source

Ejected out of rocks during hot weather in the lower Himalayas, Vidhya and other mountain tracts and Nepal where iron abounds, naturally flowing out from between the fissures in the rocks or it may be a tar formed in the earth from the decomposition of vegetable substances.

Constituents

Silasathu contains an oil which when distilled is known as ichthyol. Benzoic acid and benzoates which are present in silasathu in large quantities are considered by Chopra to be the main active principles.

Action

Locally antiseptic, anodyne, parasiticide, and antiphlogistic. Internally diuretic, lithontriptic, alterative, tonic, slightly laxative, respiratory stimulant, expectorant, intestinal stimulant.

Physical Properties of Gypsum (*karpooora Silasathu*)**Lustre**

Vitreous, Silky, Dull

Transparency

Transparent, Opaque, Translucent

Colour

Colourless to white

Tenacity

Flexible

Medicinal Uses

- It is specially employed in genito urinary diseases and in diabetes.
- It is mainly used in Gall stones, Jaundice, Enlarged spleen, Anasarca, Renal stone and Bladder calculi, Anuria.
- It is also used in Ascites, Uraemia.
- Silasathu is used as an external application for inflammatory swellings, arthritis.
- In strangury or painful micturition silasathu is used with other diuretic and demulcents.

Supportive articles

1. The karpooora silasathu is one of the ingredients of the drug jalamanjari chendooram is an effective and significant hyponatraemic, hypochloraemic, hypokalaemic and diuretic activity is present.
2. The karpooora silasathu is one of the ingredients of karasoodasathu parpam is indicated for urolithiasis and diuretic activity.
3. The drug silasathu paavanai contains essential elements which are considered to be the inhibitors of stone formation. Moreover the drug has good anti microbial activity against E.coli which causes the commonest associated urinary tract infection.

Crystallography of Gypsum (*Karpooora Silasathu*)**Crystal System**

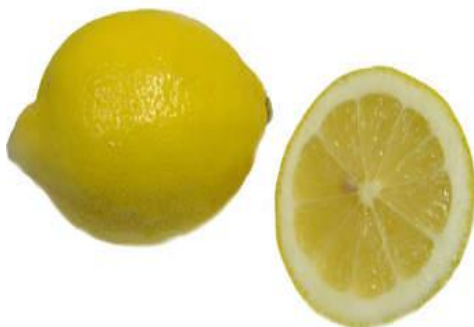
Monoclinic

Class

2 / m – Prismatic.

Morphology

- Thin and thick tabular crystals.
- Crystals may have wrapped surfaces, or be bent or twisted.
- Rosette like clusters of lenticular crystals are common.

LEMON (*Citrus Limon*.Linn)^[19]**VERNACULAR NAMES**

Eng :	Lime
Hin :	Jamiri nimbu
Kan :	Limbe
Mal :	Cerunarakaram
San :	Jambirah
Tam :	Elumichai
Tel :	Peddanimma, Nimma
Unani :	Leemu, Baraa, Neebu

CLASSIFICATION

Kingdom :	Plantae-Plants
Subkingdom :	Trachaobionta-Vascular Plants
Super Division :	Spermatophyte-Seed Plants
Division :	Magnoliopsida-Flowering
Class :	Magnoliopsida-Dicotyledons
Subclass :	Rosidae
Order :	Sapindales

Family : Rutaceae

Genus : Citrus

Species : Limon

Distribution

Throughout india, cultivated in plants and hills in area up to 1200 meter elevation. Commonly found in kumaon parts of Himalayas, northern and central India.

A much branched thorny shrub with spreading branches leaves the unifoliately compound, rachis winged, leaflet elliptic-oblong, alternate, coriaceous, entire or crenulated, flowers white in short racemes, fruits large, globose berries with thick or thin rind, pulp pale, very acid, seeds many, horizontal, testa coriaceous.

Chemical Constituents of Lemon

Lemon and other citrus fruits contain different chemicals and thought to have some health benefits. They contain a terpene called limonene which gives their characteristic lemon smell and taste. Lemon contains the significant amount of citric acid, that is why they have a low PH and a sour taste. They also contain vitamin C (ascorbic acid) which is essential to human health. 100 millilitres of lemon juice contains approximately 50mg of vitamin C (55% of the recommended daily value) and 5 gms of citric acid.

Alkaloids^[20]

Limonene is a principal constituent of essential oil, others are citronella, n-nonanal, n-decanal, n-dodecanal, linalyl-acetate, citronellyl acetate, methyl anthranilate, lipophilic flavonoids including sinesetin and furocoumarins. The chief flavonoids are naringin, and neohesperidin, dihydro chalcones hesperidone and rutin. It also contains glycosyl apigenin, p-caryophyllene, limocitrol, limocitrin, abscisic acid, gibberellic acid, abscisin II, auxin and isorhamnetin.

Nutrients – Amount

- Calories – 15.25
- Carbohydrate- 5.27g
- Sugar Total - 2.08g
- Fat Total -0.00g
- Protein -0.15g

Vitamins

Vitamin A (Iu) -12.20

Thiamine B1 – 0.02mg

Riboflavin B2 – 0.01mg

Niacin B3 – 0.06mg

Vitamin B6 – 0.03mg

Vitamin B12 – 0.00mg

Vitamin C – 28.06mg

Folate - 7.87mcg

Pantothenic acid – 0.07mg

Biotin – 0.19mcg

Vitamin k -0.00mg

Vitamin E – 0.14mg

Minerals

Calcium – 4.27mg

- Copper – 0.02mg
- Iron -0.05mg
- Magnesium -3.66mg

Manganese – 0.01mg

- Selenium – 0.06mg
- Potassium - 62.83mg
- Phosphorus - 4.88mg
- Sodium – 0.61mg
- Zinc – 0.03mg
- Selenium – 0.06mcg

MEDICINAL USES OF LEMON

- Juice of the baked lemon is an excellent remedy for cough when mixed with an equal quantity of sugar or honey and taken in teaspoonful doses.

Fresh lemon juice is recommended to be taken in the evening for the relief of dyspepsia with vomiting and bilious headache.

- Preserved with sugar or honey lemons are recommended for a sore throat and are considered to act as detergent they are administered before purgatives to prepare the body for them and afterwards to check excessive action.
- Lemon plays an important part in perfumery also. The quality of Indian peel is almost equal to the Sicilian variety and it has been estimated that if extraction of lemon oil is attempted from the Indian lemon peel, It will not be a failure commercially
- The rind of the fruit is sour, heating, with a sharp taste; anthelmintic; removes "vata", "kapha", lung troubles.
- The rind of the ripe fruit is stomachic and carminative. The oil mixed with glycerine is applied to the eruption of acne.
- The juice of the ripe fruit is a valuable antiscorbutic and refrigerant.
- In scurvy, it is one of the best remedies we possess, both as a prophylactic and as a curative. In acute rheumatism and rheumatic gout, in some forms of acute tropical dysentery and diarrhea., it has been successfully employed.
- As an antidote to some acro-narcotic poisons, it often proves effectual. The fruit in the form of pickles is useful in hypertrophy of spleen. Lemon peel is stomachic and carminative.

Cancer

In an experiment with the flavonoid eriocitrin and its metabolites and with coumarins extracted from lemon fruit, apoptosis has been demonstrated in acute myelomonocytic leukaemia cells.

Adverse Reactions of Lemon

Lemon juice may cause loss of gloss, alteration in enamel colour and irregular dental tissue on tooth enamel. Anaphylactic allergy to lemon soap has been reported resulting from a possible cross sensitivity of citrus seed to peanut allergen.

Recent Researches About Lemon Juice^[21]

1. Diuretic And Antihypertension Activity

Lemon juice is value in hypertension and Urinary diseases if used in the form of reconstituted Lemon drink (from powder packet). Traditionally lemon juice has a vast number of uses including its anti-oxidant properties, anxiolytic, antidepressant effect as well as diuretic potential.

2. Health And Medicinal Properties of Lemon

Vitamin C present in the lemon juice. So it cures scurvy. Lime juice and its oil are very beneficial for skin when consumed orally or applied externally. Lime juice has an irresistible scent which waters the mouth and thus aids primary digestion. Primarily, the ample of acids present in lime helps clear the excretory system by washing and cleaning off the tracts, just like some acids are used to clean floor and toilets. An overdose of lime juice with salt also acts as an excellent purgative without any side effects, thereby giving relief in constipation.

3. Antibacterial Activity Of Fruits Against Escherichia Coli

The lemon juice contains Antibacterial activity against E.coli. More organisms can undoubtedly be analysed for this antibacterial activity. Numerous fruits are unquestionably utilized to prevent foodborne illness diseases.

4. Lemon Polyphenols Suppress Diet-Induced Obesity

Lemon polyphenols suppress Diet-induced Obesity by up-Regulation of mRNA levels of the Enzymes Involved in β -oxidation in mouse white adipose tissue. Feeding with lemon polyphenols suppressed body weight gain and body fat accumulation by increasing peroxisomal β -oxidation through up-regulation of the mRNA level of ACO (acetyl CoA oxidase) in the liver and white adipose tissue, which was likely mediated via up-regulation of the mRNA levels of PPAR α .

5. Protective Effects Of Lemon Juice On Alcohol-Induced Liver Injury

Chronic excessive alcohol consumption (more than 40-80g/day) could induce serious liver injury. Histopathological changes induced by alcohol were also remarkably improved by lemon juice treatment. These findings suggest that lemon juice has protective effects on alcohol-induced liver injury in mice. The protective effects might be related to the antioxidant capacity of lemon juice because lemon juice showed in vitro antioxidant capacity.

CONCLUSION

By various literature survey it is well understood that each ingredient of karasooda sathu parpam has good activity related to the management of urolithiasis. Vengaram, Karpooora silasathu and lemon juice have direct indication of urolithiasis. Vengaram and karpooora silasathu are good diuretics. so it can be concluded that the formulation will be much helpful in the management of urolithiasis.

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