



Review Article

EVALUATION OF KADUKKAI CHOORANAM- A REVIEW OF ITS THERAPEUTIC POTENTIAL

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ABSTRACT

The Siddha system of medicine is an ancient traditional health care practice that emphasizes a holistic approach using herbal, mineral, and metallic preparations. *Kadukkai Chooranam* is a traditional polyherbal formulation described in classical Siddha texts such as *Vaithiya Vilakkam Ennum Amirtha Saakaram*, is traditionally employed for managing *Veezhi akkaram*, which is correlated with stomatitis. The formulation consists of seven herbal ingredients, namely *Terminalia chebula*, *Syzygium aromaticum*, *Mesua ferrea*, *Zingiber officinale*, *Piper nigrum*, *Piper longum*, and *Nigella sativa*, which are abundant in bioactive constituents such as tannins, flavonoids, alkaloids, and phenolic compounds. This review aims to evaluate the therapeutic potential of *Kadukkai Chooranam* by analyzing the morphology, botanical classification, traditional uses, phytochemical constituents, and pharmacological actions of each ingredient. The data were sourced from Siddha literature, online databases, and relevant scientific journals. The findings highlight that *Kadukkai Chooranam* exhibits anti-inflammatory, antioxidant, antimicrobial, analgesic, immunomodulatory, and wound healing activities, supporting the formulation's traditional use in oral disorders. The synergistic action of these herbs may enhance their overall therapeutic potential and reflects the holistic principles of Siddha medicine. The study concludes that *Kadukkai Chooranam* potentially provides significant therapeutic value, but further experimental and clinical studies are required to establish its safety, efficacy, and clinical applicability.

INTRODUCTION

The Siddha system of medicine is a time-honoured system of healthcare that deals with maintaining internal balance to preserve health and prevent disease. It brings together lifestyle practices with the use of natural therapeutic agents to support the body's functional harmony.

In the Balavagadam textbook, *Akkaram* categorized under the *Agakarana Noigal* is classified into 8 types, out of which *Veezhi Akkaram* represents one specific type. *Veezhi Akkaram* is characterized by inflammation of the tongue, redness of the tongue, burning sensation in the mouth, ulcerative pain, severe headache and chills.^[3]

Among the numerous Siddha formulations, *Kadukkai Chooranam* is widely recognized for its multiple therapeutic benefits. It is a classical polyherbal preparation documented in traditional Siddha texts such as *Vaithiya Vilakkam Ennum Amirtha Saakaram*.^[1] This formulation is used in the treatment of *Veezhi Akkaram*, a condition whose clinical features resemble stomatitis.

This review will explain about therapeutic potential of *Kadukkai Chooranam* by analysing the morphology, botanical classification, phytochemical constituents and pharmacological activities of its individual ingredient.

Research drug

Kadukkai Chooranam

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Ingredients of the drug^[1]

S.No	Name	Quantity
1.	<i>Kadukkai thol</i>	245 gm
2.	<i>Lavangam</i>	35 gm
3.	<i>Sirunaga poo</i>	70 gm
4.	<i>Chukku</i>	140 gm
5.	<i>Milagu</i>	175 gm
6.	<i>Thippili</i>	210 gm
7.	<i>Karunjeeragam</i>	105 gm

Preparation

All these drugs are purified as per classical Siddha texts, then powder each ingredient separately into a coarse powder and mix all the powdered ingredients. Store the finished *Chooranam* in an airtight container.

Dosage

Children aged 6 -12 years - ½ - 1 gram (twice a day after food).

Route of administration- Oral

Indication

- ❖ *Akkaram*
- ❖ *Sinukkirumal*

RESULTS**Table 1: Scientific and vernacular name of the drug ingredients^[2]**

S.No	Botanical name	Tamil name	English name	Sanskrit name	Malayalam name
1	<i>Terminalia chebula</i>	<i>Kadukkai</i>	Chebolic myrobalan	<i>Haritaki</i>	Katukkai
2	<i>Syzygium aromaticum</i>	<i>Lavangam</i>	Cloves	<i>Lavangam</i>	Karampu
3	<i>Mesua ferrea</i>	<i>Sirunaga poo</i>	Ceylon Iron wood	<i>Nagakesara</i>	Nagappoo
4	<i>Zingiber officinale</i>	<i>Chukku</i>	Dried Ginger	<i>Nagaram</i>	Inchi
5	<i>Piper nigrum</i>	<i>Milagu</i>	Black Pepper	<i>Maricha</i>	Kurumulaku
6	<i>Piper longum</i>	<i>Thippili</i>	Long pepper	<i>Pippali</i>	Thippili
7	<i>Nigella sativa</i>	<i>Karunjeeragam</i>	Black cumin	<i>Upakunchika</i>	Karinchirakam

Table 2: Morphology, Parts used, Family, Taste and Potency of the drug Ingredients ^[2]

S.No	Botanical name	Morphology	Parts used	Family	Taste	Potency
1	<i>Terminalia chebula</i>	Tree	Fruit pericarp	Combretaceae	All taste (except salt)	Coolant
2	<i>Syzygium aromaticum</i>	Tree	Dried flower bud	Myrtaceae	Pungent	Hot
3	<i>Mesua ferrea</i>	Tree	Dried flower	Guttiferae	Astringent	Coolant
4	<i>Zingiber officinale</i>	Plant	Rhizome	Zingiberaceae	Pungent	Hot
5	<i>Piper nigrum</i>	Climber	Dried fruit	Piperaceae	Pungent	Hot
6	<i>Piper longum</i>	Climber	Dried fruit	Piperaceae	Pungent Sweet	Hot
7	<i>Nigella sativa</i>	Shrub	Seed	Ranunculaceae	Bitter	Hot

Table 3: Phytochemical constituents, Pharmacological Activities and uses of drug ingredients ^[3,5,6,11,13-18]

S.No	Botanic al Name	Phytochemical constituents	Pharmacological activities	Uses
1.	<i>Terminalia</i>	Chebolic acid Chebulinic acid	Anti-inflammatory Anti-fungal activity	Cleanses the wounds and ulcers Chronic constipation

	<i>chebula</i>	Chebulagic acid Chebulagic glycosides Coumaric acid Chlorogenic acid Gallic acid Ellagic acid Corilagin Tannins Flavonoids Saponin Sterols Resin Fixed oils	Anti-ulcerogenic activity Anti-viral activity Wound healing activity Hepato-protective activity Anti-oxidant activity Immune modulatory activity Antianaphylactic activity Anti-arthritic activity Hypolipidemic activity Cardioprotective activity Antidiabetic activity Antispermato-genic activity Antinoceptive activity Anticarcinogenic activity	Piles Anaemia Intermittent fever Obesity Diarrhea Jaundice Anorexia Cough Filariasis Dysuria Impotency Cardiac diseases Sexually transmitted diseases Skin diseases Diarrhea Improve gastrointestinal symptoms and antioxidant status in patients with functional dyspepsia. Reduce oxidative stress biomarkers in humans.
2.	<i>Syzygium aromaticum</i>	Eugenol Kaempferol Eugenin Caryophyllene Glycosides Saponins Flavonoids Steroids Tannins Alkaloids Terpenes	Anti-inflammatory activity Anti-microbial activity Anti-ulcer activity Anti-oxidant activity Anti-fungal activity Analgesic activity	Treating tooth infections and toothache Flatulence Nausea Liver Bowel and stomach disorders It shows analgesic and anti-inflammatory effects in mild gingival conditions. Reduce oral microbial load and improve oral hygiene.
3.	<i>Mesua ferrea</i>	Mesuol Mesuaferrol Mesuagin Phenyl coumarins Xanthones Triterpenoids	Anti-inflammatory activity Immunomodulatory activity Anti-microbial activity Anti-ulcer activity	Fever Cold Asthma Wounds Rheumatism Scars Scabies Blood purifier Uterine bleeding Reduce joint inflammation and improve mobility.
4.	<i>Zingiber officinale</i>	Gingerols Shogaol Phenolic compounds Flavonoids Carbohydrates Proteins	Anti-inflammatory activity Anti-oxidant activity Anti-fungal activity Anti-bacterial activity Analgesic activity Anti-diabetic activity	Vomiting <i>Pitha</i> diseases Indigestion Gastritis Loss of dyspepsia Abdominal pain

		Alkaloids Glycosides	Immunomodulatory activity Anti-pyretic activity	Gingivitis Peptic ulcer Hepatomegaly Dysmenorrhoea Tastelessness It shows anti-inflammatory effects in osteoarthritis patients.
5.	<i>Piper nigrum</i>	Piperine Pipene Piperamide Piperamine Sarmentosine Sarmentine Trichosta Piperidine Piperetine Chavicine	Anti-inflammatory activity Bioavailability enhancer Anti-bacterial activity Anti-asthmatic activity Anti-hypertensive activity Anti-depressant activity Analgesic activity Immunomodulatory activity Anti-oxidant activity Anti-pyretic activity	Gastric problems Diarrhoea Indigestion Respiratory disorders Tooth decay Oral abscess Joint pain Piperine improves bioavailability of key nutrients. Supplementation may benefit metabolic markers in overweight adults.
6.	<i>Piper longum</i>	Piperine Lignans Amides Alkaloids Flavonoids Dehydropiperonaline Tetrahydropiperine Piperlongumine Piporadione	Anti-inflammatory activity Anti-ulcer activity Anti-bacterial activity Anti-fungal activity Anti-oxidant activity Hepato protective activity Anti-analgesic activity Anti-depressant activity Immunomodulatory activity	Inflammation Pains Leucoderma Urinary tract infections Piles Tumours Hiccoughs Disease of the spleen Peptic ulcer Supports respiratory wellness. Supports digestion
7.	<i>Nigella sativa</i>	Nigellicimine Nigellicimine-N-oxide Nigellone Campesterol Thymoquinone	Anti-inflammatory activity Anti-fungal activity Anti-bacterial activity Anti-oxidant activity Anti-diabetic activity Wound healing activity Anti-convulsant activity Anti-depressant activity Nephro protective activity	Anorexia Inflammatory diseases Diarrhea Dyspepsia Conjunctivitis Asthma Haemorrhage Multiple randomized trails demonstrate glycemic control and metabolic benefits in type 2 diabetes. Modulating immune responses.

DISCUSSION

The preparation of *Kadukkai chooranam* is mentioned in classical Siddha texts such as *Vaithiya Vilakkam Ennum Amirtha Saakaram*. The ingredients included in this preparation are derived from natural sources, which makes it generally safe for paediatric age group when used appropriately.

Terminalia chebula contains tannins, which promote wound contraction and facilitate healing. Experimental studies have illustrated that extracts of this herb exhibit antibacterial activity against oral pathogens such as *Streptococcus mutans*, consequently reducing the microbial load associated with oral ulcers. Clinical evidence also demonstrates its role in reducing

oxidative stress, which secondarily supports oral health.^[12]

Syzygium aromaticum contains the main bioactive constituent eugenol, which possesses analgesic, antimicrobial, and anti-inflammatory activities. Eugenol has been extensively used in dental practice for the management of pain and oral infections. Clinical and experimental studies illustrate that clove extracts can reduce gingival inflammation and oral microbial load, consequently supporting its role in oral ulcerative conditions.^[14]

Mesua ferrea contains bioactive constituents such as flavonoids, xanthenes and phenolic compounds that exhibit anti-inflammatory and antioxidant activities. Experimental studies have demonstrated that extracts of this herb can inhibit inflammatory mediators and enhance tissue repair mechanisms. A pilot study has also reported improvement in inflammatory conditions, indicating its potential role in reducing mucosal inflammation and promoting healing.^[9]

Zingiber officinale is rich in gingerols, shogaols, and phenolic compounds which possesses anti-inflammatory, antioxidant and antimicrobial activities. Clinical studies have demonstrated that ginger supplementation reduces inflammatory markers and oxidative stress, which are crucial factors in ulcerative oral conditions. Its antimicrobial activity which aids in controlling oral infections, thereby making it beneficial in stomatitis management.^[8]

Piper nigrum contains the major pungent alkaloid piperine, which enhances the bioavailability of other phytoconstituents in polyherbal formulations and contributes to its anti-microbial, anti-inflammatory activities that support oral healing. Clinical studies have revealed that piperine enhances nutrient and drug absorption, consequently improving the overall efficacy of polyherbal formulations.^[10]

Piper longum also contains alkaloids such as piperine and piperlongumine, which exhibit anti-inflammatory, antioxidant and immunomodulatory activities. Experimental evidence has revealed that these compounds play a crucial role in reducing inflammation and enhancing tissue repair, thereby facilitating healing of oral mucosal ulcers.^[19]

Nigella sativa contains the major bioactive component thymoquinone. Multiple clinical trials and meta-analyses have demonstrated its anti-inflammatory, antioxidant, antimicrobial and wound healing activities. Thymoquinone has been shown to modulate immune responses, reduce oxidative stress and accelerate oral mucosal tissue regeneration thereby reducing ulcer severity.^[20]

The synergistic pharmacological actions of these herbs including anti-inflammatory, analgesic, antioxidant, antimicrobial, antibacterial

immunomodulatory and wound healing activities provide a evidence based foundation for their therapeutic use. These activities help reduce inflammation, control infections and promote healing. In addition, this preparation may aid in maintaining oral hygiene and improving mucosal health, which is important in conditions such as stomatitis. From a Siddha perspective, it may help in balancing *Pitham* and *Kabam*, which are commonly involved in *Veezhi Akkaram*. However, further clinical trials are required to scientifically validate its safety and effectiveness.

CONCLUSION

Kadukkai Chooranam, a Siddha polyherbal formulation is generally considered safe and easily accessible for the treatment of *Veezhi Akkaram* (stomatitis). However, further clinical trials are needed to scientifically establish its safety and effectiveness.

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