



Therapeutic potency of a Siddha formulation Visnukandhi kudineer: A Review

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Abstract

Siddha system of medicine is one of the ancient system of medicine practised among tamil speaking community. The medicine in this system prepared from raw drugs from herbals, minerals, metals and animal products. Siddha classical texts have numerous poly herbal formulations for Kabasuram. One among them is Visnukandhi kudineer with 5 ingredients. It is easily preparable, palatable, assimilate quickly and also safe for paediatric usage in the treatment of Kabasuram. This review describes various facts like active constituents and focused on the pharmacological activity responsible for the curative nature of the drug. The ingredients in Visnukandhi Kudineer have antipyretic, anti malarial, antibacterial, anti inflammatory activity hence justifying its usage in above mentioned disease.

Keywords: Siddha system, Visnukandhi kudineer, Kabasuram, pharmacological activity.

Introduction

Siddha is one of the most ancient medical sciences of the world. The Siddha medicines is well founded on the basic principles of nature and its elements. The reason for the popularity of the system is attributed to its effective cure with minimal side effects. Visnukandhi Kudineer is a classic siddha compound drug which is mentioned in siddha textbook of Balavagadam. This drug used for fever, cough particularly for kabasuram.

The drug review of Visnukandhi kudineer, a polyherbal formulation gives sound evidence for its therapeutic action mentioned in literature. The ingredients of this medicine are Visnukandhi, Chukku, Kadukkai, Valuzhuvai and Indu. This review focussed on the pharmacological activities of each ingredient which supports the traditional claim and the literature search is confined to that area. The search was made from the textbooks in the library of National Institute of Siddha, journals, internet databases etc.

Standard operating procedure for preparation of Visnukandhi kudineer:**Purification of raw drugs:**

All the raw drugs are purified as per the methods mentioned in Siddha literature.

Preparation of drug Visnukandhi Kudineer:

The mentioned ingredients in the table -1 are converting into a coarse powder by pounding on milling. For the preparation of decoction 50g of the powder is boiled with 450ml of water, till reduced to 60ml of decoction (kudineer).

Table-1: Method of preparation of visnukandhi Kudineer¹

Sl. no	Tamil Name	Botanical Name/ Chemical Name	Part used	Quantity
1.	Visnukandhi	<i>Evolvulus alsinoides</i>	The whole plant	8.75 gm
2.	Chukku	<i>Zingiber officinale</i>	Rhizome	8.75 gm
3.	Kadukkai	<i>Terminalia chebula</i>	Fruit	8.75 gm
4.	Valuzhuvai	<i>Celastrus paniculatus</i>	Seed	8.75 gm
5.	Indu	<i>Mimosa rubicaulis</i>	The whole plant	8.75 gm

Table-2: Informations on herbal ingredients as per siddha text Gunapadam Mooligai vaguppu²

S. No	Botanical Names	Vernacular Names				Part used
		Tamil	English	Hindi	Sanskrit	
1.	<i>Evolvulus alsinoides</i>	Vishnukirandhi, Abaraasi	-	Shankapushti	Vishnukranta, Visnugandhi	The whole plant
2.	<i>Zingiber officinale</i>	Chukku, arukkan, Adhagam, Vidamoodiya amirtham.	Dried ginger	Sonth	Nagaram	Rhizome
3.	<i>Terminalia chebula</i>	Kadukkai, Akkodam, Amudham	Chebolic myrobalan, Ink nut	Pile Hara	Pathya, Sudha, Bhashak Priya, Haritaki	Unripe fruit, Fruit
4.	<i>Celastrus paniculatus</i>	Valuzhuvai, Kanguni	Climbing staff plant	Mal-kangni	Jyotishmuti	Leaves, Seed, Oil
5.	<i>Mimosa rubicaulis</i>	Indu	Straggling pricking shrub, Eight pinnate soap pod	-	-	The whole plant

Pharmacological activities of the ingredients of Visnukandhui kudinner

Visnukandhi:

Anti pyretic activity:

The whole herb is used medicinally in the form of decoction or infusion (1 in 40) in doses of 2 to 4 ounces. With cumin and milk it is used in fever, nervous debility and loss of memory also. In fevers attended with diarrhoea or indigestion a decoction of the drug with ocimum sanctum is administered³. *E. alsinoides* extract produced significant antipyretic activity against yeast induced hyperpyrexia in rat model at a dose of 500mg/kg. In general, NSAIDs produce their antipyretic action through inhibition of prostaglandin synthetase within the hypothalamus. It appears that antipyretic action of *E. alsinoides* extract may be related to the inhibition of PG synthesis in the hypothalamus⁴.

Antioxidant activity:

Free radical scavenging activity of ethanolic extract of the whole plant of *E. alsinoides* was evaluated by *in vitro* methods, including total antioxidant assay (FRAP method) and hydrogen peroxide scavenging activity using ascorbic acid as a standard. In this scientific paper the *E. alsinoides* has potent antioxidant activities, when compared with the standard antioxidant ascorbic acid, in a dose-dependent manner⁵.

Antibacterial activity:

Antibacterial activity of methanolic extract of *Evolvulus alsinoides* against different test organism was determined using a modified Kirby-Bauer disc diffusion method. At a concentration of 512.5mg/ml, the highest zone of clearance was obtained from methanol extract against *Klebsiella pneumoniae* with a diameter of 34mm. This was followed by *Salmonella typhi* (24mm) and *Escherichia coli* (23mm) respectively. The lowest zone of inhibition at this concentration was 5mm against *Staphylococcus aureus*⁶.

Anti malarial activity:

The methanol extract of *E. alsinoides* exhibited effective anti malarial activity against *Plasmodium falciparum* by the reduction of *Plasmodium falciparum* specific lactate dehydrogenase (PfLDH) activity to 25.04 ± 0.51 %⁷.

Chukku:

Antipyretic activity:

The aqueous extract of *Z. officinale* rhizome exhibited effective anti pyretic activity against Brewer's yeast induced pyrexia in rat models in a dose dependent manner⁸.

Anti microbial activity:

The tested ethanolic extract of ginger showed marked antibacterial activity against *Staphylococcus aureus* and *Enterococcus faecalis*. The strongest inhibition activity of the ginger extract was observed against *Staphylococcus aureus* (23 mm zone) when diluted upto 15 μ l when compared to *Enterococcus faecalis*. Though there is not much difference comparing the zone of inhibition of *Staphylococcus aureus* and *Enterococcus faecalis*, it is clear that the ethanolic extract of ginger is more efficient in gram positive organisms⁹.

Anti bacterial activity:

The ethanolic extract of *Z. officinale* showed marked anti bacterial activity against *E. coli* and Shigella in a dose dependent manner. *E. coli* and Shigella were also more susceptible to the ginger extracts while Klebsiella was the least susceptible.

The antibacterial activities of the extracts are expected perhaps due to the present of bioactive compounds like Alkaloid, Terpenoid, Saponin, Tannin, flavonoids and Anthraquinones¹⁰.

Kadukkai:

Anti oxidant activity:

Aqueous extract of *T. chebula* inhibited xanthine/xanthine oxidase activity and was also an excellent scavenger of DPPH radicals. *T. chebula* in a polyherbal formulation inhibited free radical induced hemolysis and also significantly inhibited nitric oxide release from lipopolysaccharide stimulated murine macrophages.

Antifungal activity:

An aqueous extract of *T. chebula* exhibited effective antifungal activity against a dermatophytes like *Epidermophyton*, *Floccosum*, *Microsporum gypseum* and *Trichophyton rubrum* and yeasts *Candida albicans*. *In vitro* anticandidal activity of methanol extract of *T. chebula* was observed against clotrimazole resistant *Candida albicans*. Seed extract exhibited antifungal activity against *Trichophyton glabrata*.

Antiviral activity:

T. chebula has also retroviral reverse transcriptase inhibitory activity. It protects epithelial cells against influenza A virus, supporting its traditional use for aiding in recovery from acute respiratory infections. This study depicted that *T. chebula* was effective in inhibiting the replication of human cytomegalovirus *in vitro* and in an AIDS model with immunosuppressed mice.

Antiprotozoal activity:

The acetone extract of *T. chebula* seeds showed anti plasmodial activity against *Plasmodium falciparum*.

Anti-inflammatory activity:

Aqueous extract of dried fruit of *T. chebula* showed anti-inflammatory by inhibiting inducible nitric oxide synthesis.

Anti anaphylactic activity:

Animal studies showed that extract of *T. chebula* was administered following induction of anaphylactic shock, the serum histamine levels were reduced, indicating its strong anti anaphylactic action.

Immunomodulatory activity:

Aqueous extract of *T. chebula* produced an increase in humoral antibody titre and delayed type hypersensitivity in mice. Crude extract of *T. chebula* stimulated cell-mediated immune response in experimental amoebic liver abscess in golden hamsters.

Anti-allergic activity:

A polyherbal formulation of seven medicinal plants including *T. chebula* exhibited potent *in vitro* antiallergic activity in isolated guinea pig ileum substrate¹¹.

Vazhuluvai:

Antibacterial activity:

The aqueous extract of *C. paniculatus* seed showed potent antibacterial activity against *Bacillus cereus*, *Klebsiella pneumoniae*, *Proteus morgani*, *Proteus vulgaris*, *Salmonella marcescens*, *Salmonella typhosa*, *Salmonella paratyphi A*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Staphylococcus lutea*, *Staphylococcus aureus* but was found inactive against *Bacillus subtilis* and *Salmonella paratyphi B*

Anti inflammatory activity:

The pharmacological studies of methanolic and ethanolic extracts of *Celastrus paniculatus* seeds revealed that they have remarkable inhibition in the inflammation i.e. 60.02 and 70.04% at 4th hour. The adverse effects of the synthetic pain killers can be minimized by the use of extracts of *Celastrus paniculatus*¹².

Anti oxidant activity:

The aqueous, methanolic, chloroform and petroleum ether extracts of seeds of *C. paniculatus* were investigated for their effect on cognitive functions in rat. Only the aqueous seed extracts (200 mg/kg body wt. for 14 days), showed an improvement in learning and memory. A significant increase in level of glutathione and catalase, which indicate the *C. paniculatus* seed has cognitive properties and antioxidant effect might be involved.

Anti fungal activity:

The extract of *C. paniculatus* was screened for their anti-fungal activity against six species of fungi (*Trichophyton mentagrophytes*, *T. rubrum*, *T. soudanense*, *Candida albicans*, *Torulopsis glabrata*, and *Candida krusei*).

Anti malarial activity:

A fraction of the chloroform extract of the root bark of *C. paniculatus* showed the highest antimalarial activity. A quinonoid triterpene, pristimerin was identified as active principle. However, pristimerin when tested in vitro against various multidrug resistant isolates of *P. falciparum* was less active than conventional antimalarial drugs tested¹³.

Conclusion

The ingredient of Visnukandhi kudineer are bitter in taste and can hence be used in the treatment of disease of pitha and kabha origin. Visnukandhi kudineer is therapeutically indicated for kabasuram. This review distinctly exposes that ingredients of Visnukandhi Kudineer have anti pyretic, anti malarial, anti viral, anti bacterial, anti inflammatory, anti fungal and anti oxidant activities. These properties play a key role in the treatment of kabasuram.

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