

REVIEW ON ANTIVENOM ACTIVITY OF TULASI IN SIDDHA SYSTEM

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ABSTRACT:

Snake bite has resulted in high mortality especially in rural area. *Ocimum sanctum* is an annual herb belonging to the mint family with 150 varieties worldwide. *Ocimum tenuiflorum* (synonym – *Ocimum Sanctum*) is known as tulasi (Holy basil), is an aromatic perennial plant in the family lamiaceae.. It is mainly mentioned in siddha for the treatment of snake bite. In WHO estimates at snake bites kill 100,000 people every year globally. In, India out of 216 snake species, 60 are poisonous, published in the journal of clinical Toxicology in 2014. Snake bite is a several medical, social and economic problem in many parts of the world. The present review has been focussed on the varied folk and traditional herbs and their antivenom, which might be a stepping stone in establishing therapy against snake bite treatment and management.

KEY POINTS: Tulasi , Snake bite , Siddha system.

INTRODUCTION:

Snake venom is of different types; neurotoxic (toxic to the nervous system), haemotoxic (toxic to red blood cells), cytotoxic (toxic to cells) or myotoxic (toxic to muscles). In, India out of 216 snake species, 60 are poisonous, published in the journal of clinical Toxicology in 2014. In WHO estimates at snake bites kill 100,000 people every year globally. But India, which has the highest number of snakebite deaths. The reason for this are 1) The presence of more species of the most dangerous snakes. 2) The inaccessibility of immediate medicals treatment and 3) Poor health care. *Ocimum sanctum* is an annual herb belonging to the mint family with 150 varieties worldwide. *Ocimum tenuiflorum* (synonym – *Ocimum Sanctum*) is known as tulasi (Holy basil), is an aromatic perennial plant in the family lamiaceae. Tulasi named as queen of herb in india. It is one of the holiest and sacred and most appreciated of the lot of healing and healthiness giving herbs. They declares that lord Vishnu in his vaikantha, honours the fragrance of tulasi. It decorated with a garland of tulasi leaves and the plant itself is called vishnupriya beloved of Vishnu.tulasi was a devotee of Vishnu who become finally married to him. Wherever the fragrance of tulasi goes, the air gets immediately purified. The therapeutic uses of plant are considered as safe, inexpensive & efficient as their ease of availability. In this extract used in remedies for common colds, headache, stomach disorders, soreness, heart sickness and a range of poisoning mainly antivenom activity.



Scientific Classification

Kingdom	:	Plantae
Clade	:	Angiosperms
Clade	:	Eudicots
Clade	:	Asterids
Order	:	Laniales
Family	:	Lamiaceae
Genus	:	Ocimum
Species	:	O . tenuiflasum
Binominal Name:		<i>Ocimum tenuiflasum</i> L.

USED PART - Leaf, Seeds

Morphology:

Holy basil is an erect, many – branched subshrub, 30 – 60 cm (12 – 24 m) tall with hairy stems, leaves are green purple. This is an annual much branched herb sometimes woody below. Stems and

branches are green or usually purplish, more or less square like in cross section and clothed with soft spreading hairs throughout. Leaves are elliptic – oblong; the tip, obtuse or acute, entire or serrate (teeth like) at the margin, softly hairy on both the sides; minutely gland dotted; base, obtuse or acute; stalks, long and hairy. Flowers are arranged in close whorls on elongated racemes (broad at the base, and gradually tapering upwards) as thyrus, as noted above. Calyx is bilipped, the upper lip broadly obovate or more or less orb like and much reflexed; lower lip, longer than the upper lip. Corolla is purplish, bilipped, upper lip, reflexed and purplish on the back; lower lip is flat. Nutlets are broadly ellipsoid, nearly smooth, yellow and provided with small black markings.

Leaves yield 71.3% eugenol, 3.2% carvacrol, 20.4% methyl eugenol and 1.7% caryophyllene. The plant has a pungent, bitter taste. Pharmacologically viz. in terms of its action as a drug in the body, it is stomachic (good for stomach), cholagogic (evacuating to bile), anthelmintic (destroying helminthic worms) and antipyretic (counteracting to fever). It is useful in the diseases of the heart and the blood; leucoderma; urinary retention or painful discharge; asthma and bronchitis (inflammation of the linings of the bronchial tubes of the lungs); vomiting and hiccup; foul smells in general; lumbago (rheumatic affections of the lumbar regions viz. the loins) and pains; painful eye and pus filled discharge from the ear.

The root is given in the form of decoction and as a diaphoretic viz. to induce sweating all over during the attacks of malarial fevers.

Phytochemical:

Tulasi constituents are oleanolic acid, ursolic acid, rosmarinic acid, eugenol, carvacrol, linalool, B-caryophyllene.

Essential oil:

It consists of eugenol (~70%), B-elemene (~11.0%), B-caryophyllene (~8%) and germacrene (~2%) with the balance being made up of various trace components, mostly terpenes.

Nutritional value:

It contains vitamin C & A and minerals like calcium, zinc and iron, swells chlorophyll and many other phytonutrients. It has protein = 30 kcal, 4.2g, Carbohydrates 2.3g, Fat: 0.5g, Calcium: 25mg, phosphorus: 287mg, Iron: 15.1mg, Edible portion 25mg and Vitamin c per: 100g.

TULASI ACT AS ANTIVENOM:

As soon as bitten, the patient should eat 1-2 fistfuls of tulasi leaves and simultaneously the root of tulasi should be rubbed in butter and applied over the region of the bite. To start with the colour of this application is white, but it becomes darker and still darker soon, as it draws the poison out. As soon as it becomes dark, it should be removed and a fresh application of the paste should be made there; this is to be continued till such time that there will no longer be any darkening. Another case was reported where the treatment was carried out successfully even when it was commenced nearly after 8 hours of the bite. Here the juice of tulasi was applied over the head, the temples and the chest. This was followed by a good massaging and simultaneous drinking of some banana juice. This started regaining consciousness. Even very hopeless cases of snake poison are said to respond well by such massaging with tulasi juice and an intermittent drinking of banana juice. Fresh juice of tulasi leaf is to be given for drinking and a paste of its root and inflorescence applied at the bitten place. If the patient has lost consciousness, a few drops of tulasi may be continued to be placed in his ears and nose.

CONCLUSION:

Snakebites have resulted in high mortality especially in rural area. The *Ocimum sanctum* has protective effect against snake venom. Hence, the need to investigate the metabolites presence in the plants based on the knowledge of ancient culture and traditional practice has risen exponentially. It was no clinical trials have been done so far. This review has offered the advantage of herbs in siddha medicine as antivenom agents with the vision to support the further research and also to give permanent resolution for the society.

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