

Applications of *Centalla asiatica*(L) Urb. in Siddha Varmam therapy: A Literature review

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Abstract:

Varmam therapy of Siddha system of medicine deals with treating trauma and nerve injury by manipulation of corresponding *varmam* points on the body with fingers and administration of internal and external medicines. *Centalla asiatica* is a commonly used herb in the *Varmam* treatment and is mentioned as *Vetri pachilai* and *Vallarai* in Siddha *Varmam* literatures. It is administrated both as internal and external medicine. Literature review on the results of scientific studies published in peer reviewed journals reveals the nerve regenerative and wound healing properties of *Centella asiatica*. This review throws limelight on therapeutic potential of *Centalla asiatica* in treating trauma and need for pre clinical and clinical studies in *Varmam* therapy.

Key words : *Varmam, Siddha, Centella asiatica, Vallarai*

Introduction:

Varmam therapy is a branch of Siddha medicine that deals with the treatment of ailments by triggering particular points on the body, where the *Vaasi* or *pranan*(Vital energy of breath) is concentrated. *Varmam* has been practised both as martial arts for self defence and as a therapy for healing and termed as *Thaakku Varmam* and *Ilakku varmam* respectively. *Varmam* as a therapeutic healing practice includes the application of pressure with fingers on *Varmam* points on body and prescription of internal and external medicines. *Vallarai* (*Centalla asiatica*) is a herb commonly used as *Ega mooligai prayokam* (Siddha Lone herb therapy) and both as internal and external medicine in *Varmam* therapy. This paper discusses in detail about the applications of *Centalla asiatica* in Siddha *Varmam* therapy with reference to Siddha Literatures and scientific studies on *Centalla asiatica* published in peer reviewed scientific journals.

Varmam:

Varmam is a subtle energy which helps in the proper functioning of body and life force. This energy regulates proper functioning of the air, blood and heat flow in body, thereby preventing the affliction of diseases. The *varmam* energy is connected with entire body. The paramount duty of this energy is to protect the body and life force. The places in body where subtle *varmam* energy is found are referred to as *varmam* points or *varmam* locations.

Though *Varmam* texts mentions the existence of 8000 *varmam* points in the body, there is a general notion that there are 108 *varmam* points which serve as the basis of art of *varmam*. They are classified into 12 *Padu varmams* and 96 *Thodu varmams*.(*Thodu varmam* is a *varmam* point that gets its name by the stimulation

of it by touch. Whereas, when the application is done on a *varmam* point and it activates other points also, then that *varmam* point is called as *Padu varmam*^[1]

Vallarai (Centalla asiatica L Urb):

Centalla asiatica, commonly known as *Vallarai* in Tamil and Asian pennywort in English is frost tender perennial plant in flowering family Apiaceae. It is native to wetlands in Asia. The taxonomical tree of *Centalla asiatica* is explained as follows,

Domain: Eukaryota
 Kingdom: Plantae
 Phylum: Spermatophyta
 Subphylum: Angiospermae
 Class: Dicotyledonae
 Order: Apiales
 Family: Apiaceae
 Genus: Centella
 Species: Centella asiatica



Fig 1: Centella asiatica (L) Urb.

Botanical identification:

Centella asiatica is a perennial creeping herb, rooting at the nodes, but sometimes forming a large taproot. Stem is with shallow grooves, sometimes purplish. Leaves are solitary or in groups of up to 5, pubescent or glabrous; lamina 1–7 cm. wide, reniform to almost orbicular, with a deep basal sinus; margin crenate, glabrous or with scattered hairs on upper part of petiole (petiole sometimes densely hairy when young). Umbels sub capitate; peduncles 1.5–5 cm. long, glabrous or pubescent, usually much shorter than the subtending petiole. Flowers 2–8, inconspicuous, hermaphrodite, with an involucre of 2 ovate, membranous, persistent bracts. Pedicels slender or obsolete; petals 5, dark crimson to greenish-white, 1 mm, orbicular with a slender inflexed point. Calyx teeth and stylopodium obsolete; styles short, ± divergent. Fruit 3.5 × 3 mm., orbicular to ellipsoid, brown at maturity, deeply constricted at the commissure and flattened laterally, primary ribs prominent when ripe, secondary ribs ± evident; carpophore entire, splitting in two at maturity with a seed in each half.^[2]

***Centella asiatica* in Siddha medicine:**

Centella asiatica is commonly known as *Vallarai* in Tamil. It is also mentioned as *Sandaki*, *Pindeeri* and *Yosanavalli* in Siddha literatures^[3]. Common uses of *Centella asiatica* is mentioned in Traditional Siddha literature, *Theraiyar Gunavakadam* as follows,

*Akkara noi maarum akalum vayitrilivu
Thakkavi rathakaduppu thaanekum – Pakkathil
Ellaraiyum marunthendre uraithu nanmaniyul
Vallaraiyai valarthu vai*^[3]

This may be translated as- *Vallarai* is used in the treatment of mouth ulcers, diarrhoea and dysentery.

Materials and methods:

The review process is adapted to collect various references in Siddha *Varmam* literatures in which *Vallarai* is indicated in the treatment of *Varmam* as such with the name of *Vallarai* or in the name of *Vetri pachilai*. The pharmacological activity of *Centella asiatica* in relation to treatment of trauma is sorted out by searching in the Pubmed with the *Centella asiatica* as keyword.

Inclusion and exclusion criteria:

Siddha *varmam* literatures that are taken into account for review are *Bogar varma soothiram*^[4], *Varma Kannadi*, *Varma Beerangi*^[5]. Only the data from the original literature was taken into account and the data from the description of literature by publishers in the above mentioned books were not taken into account.

Centella asiatica in Siddha *Varmam* literature:

Description:

*Vayamenna ilakatha kaalathirku
Mathiraihal Eakamooli maayon maayon
Ayamenna karumudippuku athika mooli
Appane aathuvallarai thane yaarum
Neyamai saarupilinthu thaakum pothu
Nayakane varmamellam ilakum paaru*^[4]

Bogar varma soothiram^[4] explains that, when a disorder in *Varmam* is unable to rectify by manual finger manipulation techniques, *Vallarai* leaf juice may be given.

Vallarai is also mentioned as *Eakamooli*, *Vetri pachilai* and *Pachilai* in Siddha *varmam* literatures.

Identification:

The habitat and identification of *Vallarai* is mentioned as follows in *Bogar varma soothiram*,

*‘Thanana vetriyendra pachilaiyai kelu
Saarntha thanneer thayavu thannil thalaithu nirkum
Vanana vayasatharku Nootri pathu
Vakai therinthal vaasam veesum vallarai enpaar
Konana sitharukkum kodimooligai*^[4]

The above lines may be deciphered as, *Vetri pachilai* grows abundant near water bodies. The age of herb is One hundred and ten. It is a creeper with tender stem. It may be identified by its peculiar aroma. It is also called as *Vallarai*.

Application in Varmam therapy:

Vallarai is given both as internal and external medicine. It is used mostly as *Eakamooligai pirayokam* i.e single herb therapy and also in combination with other herbs as polyherbal therapy.

Table No.1: Varmam points affected and application of *Centella asiatica* as internal or external medicine with Varmam manipulation therapy.

S.No	Varmam point affected	Symptoms	Application Internal/ External	Other medicines used in combination with Vallarai
1	<i>Kurunthu kuthi varmam</i> ^[4]	<i>Kann noi</i> (Eye diseases), Sanni,Kabam	Internal	Chukku thailam instilled as drops in both nostrils for three days
2	<i>Mootu varmam</i> ^[4]	Swelling in elbow joint, Change of colour of blood in surrounding muscles	External	-
3	<i>Muzhi varmam</i> ^[4]	Ulceration in the flexor aspect of elbow joint. Fracture of upper end of ulnar bone.	External	Bone setting done by traditional method. <i>Murivennai</i> also applied on surrounding inflamed area.
4.	<i>Manibhanda varmam</i> ^[4]	Fracture of upper end of ulnar bone. It is lethal and may result in death on 12 days after injury	Internal	Traditional bone setting done. <i>Murivennai</i> applied on the surrounding areas of inflammation
5	<i>Thuthikkai varmam</i> ^[4]	Blurred vision, Tremor	Internal	-
6	<i>Konasanni Varmam</i> ^[4]	Facial paralysis, Constriction of muscles all over the body.but Finger muscle gets relaxed.It is lethal and causes death in three days after injury.	Internal	<i>Thee thailam</i> is applied all over the body.
7	<i>Patha Chakkaram</i> ^[4]	Shrunken eyes, Cough, Restlessness.	Internal	<i>Vasavennai</i> is applied externally. (Cure may be observed only after 20 days)
8	<i>Poozhi kala Varmam</i> ^[4]	Muscle cramps, Paralysis	Internal	-
9	<i>Mundaka varmam</i> ^[5]	Swelling of arm, Pain in both upper and lower limbs,	Internal	<i>Murivennai</i> is applied externally.

		delirium, major nerve in the hand is affected, headache		
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Other medicines for varmam with Vallarai as an ingredient^[4]

1. *Varma kashayam* – Internal medicine in decoction form
2. *Suvarathi ennai* – External Medicine (Medicated oil)
3. *Mezhugu* – Internal medicine with waxy consistency

Traditional theory on the *Ekamooligai prayokam* of Vallarai for Varmam:

Varmam points are generally classified into *Thodu varmam* and *Paduvarmam*. *Thodu varmam* is a *varmam* point that gets its name by the stimulation of it by touch. Whereas, when the application is done on a *varmam* point and if it activates the other points also, then that *varmam* point is called *Padu varmam*. It is said that there are 12 *Padu varmams* and 96 *Thodu Varmams*. *Vallarai* is generally given for all *Thodu varmams*.^[1]

It is mentioned in *Bogar Varma Soothiram* as follows,

‘*Naranamendra thoduvarmam adakka kaalam*
Navaloka Vallarai akum sonnen
Karanamendra paduvarmam adakka kaalam
Karuthaka veliyennum paruthi thane^[4]

Pharmacological action of *Centella asiatica*(L) Urb:

Nerve regenerative action:

Axonal regeneration is important for functional recovery following nerve damage. According to a in-vitro study conducted by Soumyanath A et al^[6], *Centella asiatica* ethanolic extract (100 µg mL⁻¹) elicits a marked increase in neurite outgrowth in human SH-SY5Y cells in the presence of nerve growth factor (NGF). Sub-fractions of *Centella* ethanolic extract, obtained through silica-gel chromatography, were tested (100 µg mL⁻¹) for neurite elongation in the presence of NGF. Greatest activity was found with a non-polar fraction (GKF4). Relatively polar fractions (GKF10 to GKF13) also showed activity, albeit less than GKF4. Thus, *Centella asiatica* contains more than one active component. Asiatic acid (AA), a triterpenoid compound found in *Centella* ethanolic extract and GKF4, showed marked activity at 1 µM (0.5 µg mL⁻¹). AA was not present in GKF10 to GKF13, further indicating that other active components must be present. Neurite elongation by AA was completely blocked by the extracellular-signal-regulated kinase (ERK) pathway inhibitor PD 098059 (10 µM). Male Sprague-Dawley rats given *Centella* ethanolic extract in their drinking water (300–330 mg kg⁻¹ daily) demonstrated more rapid functional recovery and increased axonal regeneration (larger calibre axons and greater numbers of myelinated axons) compared with controls, indicating that the axons grew at a faster rate.

Wound healing action:

Study results of an In vitro study conducted by Shuklaa A et al^[7] shows that ,In guinea pig punch wounds topical applications of 0.2% solution of Asiaticoside produced 56% increase in Hydroxyproline, 57%

increase in tensile strength, increased collagen content and better epithelisation. In Streptozotocin diabetic rats, where healing is delayed, topical application of 0.4% solution of Asiaticoside over punch wounds increased Hydroxyproline content, tensile strength, collagen content and epithelisation thereby facilitating the healing. Asiaticoside was active by the oral route also at 1 mg/kg dose in the guinea pig punch wound model. It promoted angiogenesis in the chick Chorioallantoic membrane model at 40 µg/disk concentration. These results indicate that Asiaticoside exhibits significant wound healing activity in normal as well as delayed healing models and is the main active constituent of *Centella asiatica*.

According to a in-vivo study conducted by Suguna L et al^[8] on rats, *Centella asiatica* extract increases cellular proliferation and collagen synthesis at the wound site, as evidenced by increase in DNA, protein and collagen content of granulation tissues. Quicker and better maturation and cross linking of collagen was observed in the extract-treated rats, as indicated by the high stability of acid-soluble collagen and increase in aldehyde content and tensile strength. The extract treated wounds were found to epithelialise faster and the rate of wound contraction was higher, as compared to control wounds. The results show that *Centella asiatica* produced different actions on the various phases of wound repair.

Conclusion:

Varmam therapy is a specialised branch of Siddha medicine that deals with the treatment of trauma and nerve injury. *Varmam ilakku murai* (Treatment of affected *varmam* points) includes both manipulation of *varmam* points with fingers and administration of external and internal medicines. Many herbs are being used as internal medicine in the treatment of *varmam* both as single herb therapy (*Eka mooligai pirayokam*) and polyherbal medicine. *Vallarai* (*Centella asiatica*) is a widely used herb mentioned in *Varmam* literatures as *Vetri pachilai* (Victory herb). The literature review on the applications of *Vallarai* in Siddha *Varmam* therapy shows that *Vallarai* is used both as internal and external medicine in the wound and nerve related injuries by *Varmam*. The symptoms indicated for the injury on *varmam* points as mentioned in the Siddha *varmam* literatures are mostly wounds, fractures and symptoms caused by underlying nerve injury or degeneration. Review of Scientific studies on the pharmacological activity of *Centella asiatica* also shows that *Centella asiatica* has a potential action on wound healing and has nerve regenerative action. This may be further concluded by wide scale pre clinical and clinical studies on the above subject.

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