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## Evidence based Siddha Medical Management of Dengue

**Corresponding Author:**

Dr. Parameswaran Sathiyarajeswaran,  
Research officer, Siddha Central Research Institute - India

**Submitting Author:**

Dr. Shanmugasundaram Natarajan,  
Consultant Varmam Therapy, Siddha Regional Research Institute, 600106 - India

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# Evidence based Siddha Medical Management of Dengue

**Author(s):** Natarajan S, Sathiyarajeswaran P, Kannan M, Jega Jothi Pandian S

## Introduction

Dengue is considered to be one of the most anthropod borne human viral infection. *Aedes aegypti* is the vector that spread dengue fever. In Asian region, most of the deaths of children is due to the dengue haemorrhagic fever. Dengue viruses belong to flaviviridae family. Dengue has four serotypes such as DENV-1, DENV-2, DENV-3, DENV-4 which is mapped after the antibodies produced by the body after infection.

## Epidemiology

Eventhough the infectious diseases are controlled due to sophisticated drug invention, the vector borne disease is still being a threat to the global health issues. Particularly Dengue leads the developing countries to public health challenge and put economic burden over them. Today about 2.5 billion people, or 40% of the world's population, live in areas where there is a risk of dengue transmission see WHO/Impact of Dengue. Dengue is endemic in at least 100 countries in Asia, the Pacific, the Americas, Africa, and the Caribbean. The World Health Organization (WHO) estimates that 50 to 100 million infections occur yearly, including 500,000 DHF cases and 22,000 deaths, mostly among children.

## Transmission of the Dengue Virus

Dengue is transmitted between people by the mosquitoes *Aedes aegypti* and *Aedes albopictus*, which are found throughout the world. Insects that transmit disease are vectors. Symptoms of infection usually begin 4 - 7 days after the mosquito bite and typically last 3 - 10 days. In order for transmission to occur the mosquito must feed on a person during a 5-day period when large amounts of virus are in the blood; this period usually begins a little before the person become symptomatic. Some people never have significant symptoms but can still infect mosquitoes. After entering the mosquito in the blood

meal, the virus will require an additional 8-12 days incubation before it can then be transmitted to another human. The mosquito remains infected for the remainder of its life, which might be days or a few weeks.

## Clinical Stages and management

### Phase in Dengue

#### Febrile Phase

#### Hyperpyrexia, Dehydration

#### Critical Phase

#### Severe Haemorrhage, Plasma leakage and Organ impairment

#### Recovery Phase

#### Recovering from illness

#### Febrile Phase:

- Fever with head ache
- Fever - "biphasic pattern"
- Muscle and Joint pain
- Generalized maculopapular rash
- Abdominal discomfort - Abdominal pain, Nausea, Vomiting and diarrhea
- Hemorrhagic rash
- Clinically, the platelet count will drop until after the patient's temperature is normal.

#### Critical Phase:

- High fever
- Thrombocytopenia (<100,000 platelets per mm<sup>3</sup>)
- Hematocrit - more than 20%
- Encephalitic occurrences

#### Dengue shock syndrome

- Weak speedy pulse
- Narrow pulse pressure (Less than 20 mm of Hg)
- Cold clammy skin and restlessness

Dengue shock syndrome as it is an emergency should be hospitalized immediately.

## Dengue in Siddhs

Siddha system of Medicine groups all types of pyrexia as single disease known as Suram. It includes the vector borne diseases like Malaria, Dengue. Among them Siddha equates the Dengue to Pitha Suram. Sura Vadagam, a Old Siddha text describes the symptoms of Pitha suram as fever with dryness of mouth, red coloured urine (hematuria), nausea, vomiting, anorexia, bitter sensation in tongue, ulceration in mouth, myalgia, dysentery, yellowish discoloration of sclera (jaundice), increased thirst, fever followed by chills at some time. Siddha Maruthuvam, another Siddha text describes the symptoms as are increased sleep, red coloured feaces and urine, dysentery, vomiting, bitter sensation in tongue, coma, symptoms of altered sensorium, increased thirst.

Siddha literature, 'Agastiyar sura nool 300' describes that the 'Pitha suram' can causes bleeding correlates the haemorrhage in dengue fever.

The symptoms described by the above mentioned texts correlates with the definition of Dengue Fever by WHO (Dengue: Guidelines for diagnosis, treatment, prevention and control edition 2009, Dengue haemorrhagic fever: diagnosis, treatment, prevention and control. 2nd edition. Geneva: World Health Organization. 1997)

## Treatment in Siddha

### 1) Sitramutti Kudineer (no.1)

Sitramutti, Chukku-each 15 gram is taken and made into decoction

### 2) Sitramutti Kudineer (no.2)

Root of vilwam, sitramutti, pathiri, stem of surai (surai thandu) each 10 gram is taken and made into decoction. During the process of making decoction kothumalli, pachai payiru are added.

### 3) Sitramutti kudineer (no-3)

The ingredients are seenthil, parpadagam, chandanam, vilamichuver, chukku, iruveli, sitramutti, korai kizhangu.

### 4) Chukku kudineer:

The ingredients are chukku, iruveli, arasampattai, koraikizhangu, sirukanjori, pangampalai.

### 5) Dengue- Influenza cure powder:

This is a clinically proved medicine by Dr.G.D.Naidu, Dr.Shanmugavelu and mentioned in the book 'Research pharmacopeia of siddha medicines'. The

medicines in the book are prepared and evaluated by Dr.G.D.Naidu, Dr.Shanmugavelu on the period of 1961-1972 in 'Siddha research laboratory, Coimbatore' with the help of Siddha doctors. He registered the evaluated successful medicines in the book. One of the medicines in this collection is 'Dengue-Influenza cure powder'.

### Dengue influenza cure powder:

Ingredients:

Linga kattu chendooram

Kastoori chendooram

P.S.M.M. parpam

Vasantha kusumagaram pills (powered)

Amukkra choornam

### Indications:

Dengue, Influenza and other infective diseases are cured in 3-4 days or earlier. Nochi kudineer, Nilavembu kudineer may be given in addition in morning and evening. Dose -10 grains with honey.

### 6) Adathodai juice:

10-20drops of Adathodai(Justicia adathoda) is mixed with equal quantity of honey and may be given for 'kuruthu azhal noi' (Dengue hemorrhagic fever).

### 7)Santha chandrodayam pills:

The ingredients are Vengaram, Rasakarpooram, Kappu manjal. Dose is 1-2 pills with honey.

In dengue hemorrhagic fever it is better to give drugs which are styptics and which will increase the platelet count. Along with any one of the above said prescriptions the following should be added.

## Prescription Guide lines

### Management of Fever

Nilavembu kudineer,

Pittasurakudineer,

Bramhananda Bairavam Tablet.

### Prevention of Hemorrhagic symptoms

Imbural vatakam

Padiga poongavi Chenduram

Kavikkal Chooranam

### General health improvement

Nellikai lehyam – 5 Gm BID

Triphalachooranam tablet – 2 BID

Amukkara chooranam tablet- 2

### Prevention of recurrence

Regular usage of Nilavembu Kudineer and Adathodai Kudineer will help much.

### Haemorrhage

Papaya leaf juice 5 ml Daily increases platelet production.

### Vector control

Application of Karpoorathy Thylam

Neem leaves Fumigation

Usage of Poonkarpooram instead of Mosquito repellent mats

Closed Storage of Water.

Spraying of Mosquito Cidal spray in Water logged areas.

### Evidence Based Siddha Medicine

Compound / Single Formulation Evidence based

#### 1. Nilavembu kudineer

1. Antipyretic, Analgesic, Antidengue activity proved. The methanol extracts of *A. paniculata* and *M. charantia* possess the ability of inhibiting the activity of DENV-1 in *in vitro* assays (Anna PK ling et al, 2012).

2. Ethanolic extract of Nilavembu kudineer choornam (EENKC) possesses antipyretic, anti-inflammatory and analgesic activity which supports nilavembu kudineer choornam efficacy in chikungunya fever. (Anbarasu, 2011).

**2. Adathodai kudineer** (can also be used as larvicidal in prevention of vectors)

All the tested fractions proved to have strong larvicidal activity (doses from 100 to 250 ppm) against *C. quinquefasciatus* and *A. aegypti* in Methanolic extracts of *A. vasica*.

#### 3. Veppilai chooranam (Herbal powder)

The effect of *A. indica* leaf extract and pure Compound (Azadirachtin) on the replication of Dengue virus type-2 has also been reported. (Parida et al, 2002)

Compound / Single Formulation Evidence based

#### 1. Amukkara chooranam

Ashwagandha prevented myelosuppression in mice treated with all three immunosuppressive drugs tested. A significant increase in hemoglobin concentration ( $P < 0.01$ ), red blood cell count ( $P < 0.01$ ), white blood cell count ( $P < 0.05$ ), platelet count ( $P < 0.01$ ), and body weight ( $P < 0.05$ ) was observed in Ashwagandha-treated mice as compared with untreated (control) mice. We also report an immune stimulatory activity: treatment with Ashwagandha was

accompanied by significant increases in hemolytic antibody responses towards human erythrocytes. (Ziauddin et al, 1996)

### 2. Amman Pachirisi Karkam

The researchers subjected *Euphorbia hirta* leaves to decoction, a method of extraction performed through boiling. Tawa-tawa's platelet-increasing activity was tested on laboratory experimental rats, specifically Sprague-Dawley. According to Lopez, results of the study showed that the tawa-tawa extract was effective in increasing the platelet count of rats without notable effects in red blood cell and white blood cell counts. The group also concluded that the platelet increasing property of tawa-tawa works through the stimulation of platelet production in the bone marrow. (Lopez et al 2011)

## Conclusion

Medical system regains their value when they are effectively utilized in Public health outbreaks. In dengue outbreaks the details furnished here with may be helpful and by which a large group of sufferers may be benefited

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## Illustrations

### Illustration 1

Nilavembu(*Andrographis paniculata*)



### Illustration 2

Adathodai(*Adathoda vasica*)



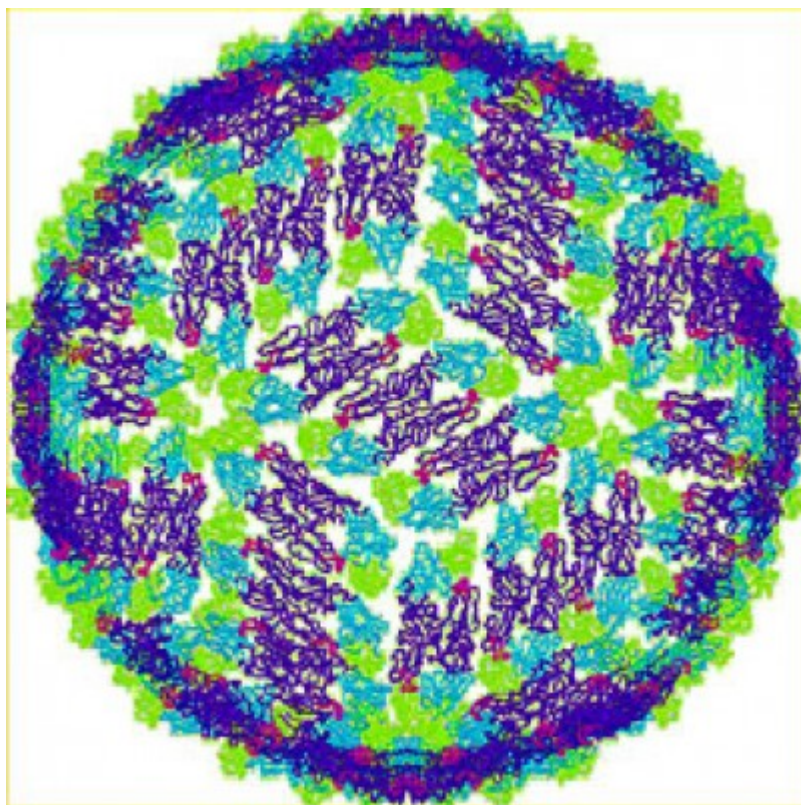
## Illustration 3

Sittramutti(*Sida cordifolia*)



## Illustration 4

Dengu virus





## Illustration 5

*Aedes aegypti* Mosquito



## Illustration 6

Mosquito breeding sites



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