Evidence based Siddha Medical Management of Dengue

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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 is belong to flaviviridae family. Dengue has four serotypes such as DENV-1, DENV-2, DEVN-3, DEVN-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
Cricital 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.

Cricital Phase:
- High fever
- Thrombocytopenia (<100,000 platelets per mm³ )
- 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, an 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.


### 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, korai kizhangu, sirukanjori, pangamalai.

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
- Vasanthu 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, Rasakarpuram, 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
Compoud / Single Formulation Evidence based

1. Nilavembu kudineer

2. Ethanol 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)

Amman Pachiris Karkam
The researchers subjected Euphorbia hirta leaves to decoction, a method of extraction performed through boiling. Tawa-tawa’s platelett-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 out breaks. In dengue outbreaks the details furnished here with may be helpful and by which a large group of sufferers may be benefited

References
Studies on the immunomodulatory effects of Ashwagandha. JEthnopharmacol, 50: 69-76.
7. www.siddhaforpeople.blogspot.com
Illustrations

Illustration 1

Nilavembu (Andrographis paniculata)

Illustration 2

Adathodai (Adathoda vasica)
Illustration 3

Sitramutti (Sida cordifolia)

Illustration 4

Dengu virus
Illustration 5

Aedes aegypti Mosquito

Illustration 6

Mosquito breeding sites
Reviews

Review 1

Review Title: Evidence based Siddha Medical Management of Dengue

Posted by Dr. Thomas Herchline on 09 Nov 2012 12:56:49 PM GMT

What are the main claims of the paper and how important are they?:
The main claims of the paper are that many Siddha treatments are effective for Dengue. If true, this would be very important given the morbidity and mortality from Dengue and the current lack of proven treatments.

These are novel claims - there are no published reports regarding treatment beyond supportive care.

There is no discussion of the current standard of care for patients with Dengue.

There are no results presented in this paper. Rather, there is reference to in vitro studies regarding the activity of various treatments on the dengue virus, the A. aegypti (vector), or anti-inflammatory activity.

If a protocol is provided, for example for a randomized controlled trial, are there any important deviations from it? If so, have the authors explained adequately why the deviations occurred?
There is no protocol provided.

There is no methodology provided.

N/A

N/A

Rating: 2

Comment:
There is a claim that Dengue-nfluenza cure powder is a "clinically proved medicine by Dr.G.D.Naidu, Dr.Shanmugavelu and mentioned in the book Research pharmacopeia of siddha medicines". However, no reference is listed for this book.

Competing interests: None

Invited by the author to make a review on this article? : No

Have you previously published on this or a similar topic?: No

References:
Experience and credentials in the specific area of science:
Infectious Diseases Physician, Medical Director for Public Health - Dayton & Montgomery County

How to cite: Herchline T.Evidence based Siddha Medical Management of Dengue[Review of the article 'Evidence based Siddha Medical Management of Dengue " by ],WebmedCentral 1970;3(11):WMCRW002326
Review 2

Review Title: Evidence based siddha medical management of dengue

Posted by Dr. Uma Kelekar on 08 Nov 2012 06:44:08 PM GMT

What are the main claims of the paper and how important are they?:
Through this paper, the authors describe a traditional treatment for dengue fever based on "Siddha system of medicine groups" that claims a lot of lives in the developing world. This paper outlines the details of the treatment along with the prescriptive guidelines for treating dengue fever that poses a huge economic burden to the lives of the people in the developing world. So it is clearly an important issue in the field of public health.

It is a traditional form of treatment of a communicable disease that is examined. So it is clearly a novel idea to a large part of the audience.

No. There are no benchmarks used in order to compare the claims made in this paper. The authors do not specify why this form of medical treatment should override the conventional form of modern medicine treatment. Although it is stated it is a clinically proven treatment, there is no previous literature or evidence presented in support of it.

There is a lot of information presented about the different ingredients of the medicines under the Siddha system along with detailed prescriptive guidelines. Although the names of ingredients are not comprehensible to a non-native reader, their medicinal values are justified based on previous claims.

If a protocol is provided, for example for a randomized controlled trial, are there any important deviations from it? If so, have the authors explained adequately why the deviations occurred?

NA

Besides listing the treatment for the disease and the prescription guidelines, there is no methodology described in this paper.

Certainly. Background of the Siddha system of medicine group and their record in treating similar non-communicable diseases/ The success record of the recommended treatment/Side-effects if any of the recommended treatment vis-a-vis a conventional medical treatment would have all helped in improving this paper.

Certainly. Background of the Siddha system of medicine group and their record in treating similar non-communicable diseases/ The success record of the recommended treatment/Side-effects if any of the recommended treatment vis-a-vis a conventional medical treatment would have all helped in improving this paper.

Rating: 3

Comment:

NA

Competing interests: No

Invited by the author to make a review on this article?: No

Have you previously published on this or a similar topic?: No

References:

Experience and credentials in the specific area of science: None

How to cite: Anonymous.Evidence based siddha medical management of dengue[Review of the article "Evidence based Siddha Medical Management of Dengue " by ].WebmedCentral 1970;3(11):WMCRW002325
Review 3

Review Title: Evidence based Siddha Medical Management of Dengue

Posted by Dr. Amitav Banerjee on 08 Nov 2012 04:50:48 AM GMT

What are the main claims of the paper and how important are they?:
The main claims are the effectiveness of traditional cures used in Siddha system of Medicine for Dengue. These claims are important since dengue fever is fast emerging due to rapid industrialization, increase mobility and population density, increase in vectors due to poor water management and climate changes, and occasional severe forms such as dengue hemorrhagic fever which can be fatal.

Though the title of the paper mentions, "Evidence based," most of the claims are based on reports in classic texts with no description of rigorously conducted randomized controlled trials which would substantiate such claims. Majority of the cases of dengue fever may be self limiting making it difficult to establish the efficacy of drugs claimed to be effective. The paucity of properly described RCTS weaken the claim of "evidence based" recommendations of the paper.

No

No, more review of properly conducted RCTs is indicated.

If a protocol is provided, for example for a randomized controlled trial, are there any important deviations from it? If so, have the authors explained adequately why the deviations occurred?
Protocol of studies mentioned not described

No

RCTs would be required. Large samples of dengue patients with be required. Confirmation of diagnosis would require specialized laboratory support. Work on this would be quite difficult and also involve high costs.

RCTs would be required. Large samples of dengue patients with be required. Confirmation of diagnosis would require specialized laboratory support. Work on this would be quite difficult and also involve high costs.

Rating: 3

Comment:
No

Competing interests: No

Invited by the author to make a review on this article? : No

Have you previously published on this or a similar topic?: No

References:
Experience and credentials in the specific area of science:
Have worked in the field of vector borne diseases as a public health specialist and epidemiologist in the armed forces. Have published on vector borne diseases such as malaria. Trained in clinical epidemiology and research methodology which facilitates critical appraisal of papers

How to cite: Banerjee A.Evidence based Siddha Medical Management of Dengue[Review of the article 'Evidence based Siddha Medical Management of Dengue " by ].WebmedCentral 1970;3(11):WMCRW002324
Review 4

**Review Title:** Evidence based Siddha Medical Management of Dengue

Posted by Dr. Muniappan Ayyanar on 08 Nov 2012 02:09:01 AM GMT

**What are the main claims of the paper and how important are they?:**
Dengue is an important cause in India especially during the last few months. So the study is very important in this situation to know about how can we manage dengue through our traditional treatments.

Yes. But the discussion section is not satisfactory.

Unfortunately the authors are not given the botanical names of the plant names. Instead of providing local (Tamil) names in the treatments in Siddha section, along with these local names the scientific names would also be provided.

Yes

**If a protocol is provided, for example for a randomized controlled trial, are there any important deviations from it? If so, have the authors explained adequately why the deviations occurred?**
Not applicable.

The methodology part is not applicable, since the paper is evidence based review article.

NIL

NIL

**Rating:** 7

**Comment:** Nil.

**Competing interests:** No

**Invited by the author to make a review on this article? : No**

**Have you previously published on this or a similar topic?: Yes**

**References:**

**How to cite:** Anonymous.Evidence based Siddha Medical Management of Dengue[Review of the article 'Evidence based Siddha Medical Management of Dengue' by ].WebmedCentral 1970;3(11):WMCRW002323
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