



## “AN AYURVEDIC INSIGHT TOWARDS DENGUE FEVER”

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### ABSTRACT

Dengue, according to the World Health Organization (WHO), is the most rapidly spreading mosquito-borne viral disease in the world. *Aedes aegypti* breeds near human habitation, using relatively fresh water from sources such as water jars, discarded containers etc. Dengue fever begins with a sudden high fever, often as high as 104 - 105 degrees Fahrenheit. Other symptoms include Fatigue, Joint aches,

Muscle aches, Nausea. In present study *Agantuj Visham Jvara* features are found similar as symptoms of Dengue fever. Due to Virus infestation and irregular nature of fever it can be co-related with *Agantuj Visham Jvar*. In present study *Agantuj Visham Jvara* features are found similar as symptoms of Dengue fever. With the help of this study, early diagnosis and alternate method of treatment without any side effects can be established to prevent death.

**KEYWORDS:** Dengue fever, *Agantuj Visham Jvara*, *Dhatugat avastha in Dengue fever*, Ayurvedic management of Dengue fever.

### INTRODUCTION

Dengue, according to the World Health Organization (WHO), is the most rapidly spreading mosquito-borne viral disease in the world. Dengue fever is caused by one of four different but related viruses. It is spread by the bite of mosquitoes, most commonly the mosquito *Aedes aegypti*, which is found in tropic and subtropics regions.<sup>[1]</sup> This mosquito typically breeds near human habitation, using relatively fresh water from sources such as water jars, vases, discarded containers, coconut husks, and old tires. *A. aegypti* usually inhabits dwellings and bites during the day. With increasing spread of the vector mosquito throughout the tropics and subtropics, large areas of the world have become vulnerable to the introduction of Dengue viruses, particularly through air travel by infected humans.

Dengue fever begins with a sudden high fever, often as high as 104 - 105 degrees Fahrenheit, 4 to 7 days after the infection. Headache, retro orbital pain, and back pain along with the severe Muscular pain that gave rise to the colloquial designation "*break-bone fever*." A flat, red rash may appear over most of the body 2 - 5 days after the fever starts. Other symptoms include Fatigue, Joint aches, Muscle aches, Nausea. Laboratory findings are a low white blood cell count, which may then be followed by low platelets and metabolic acidosis. Improper or late diagnosis and failure in the treatment leads to death.

In present study *Agantuj Visham Jvara* features are found similar as symptoms of Dengue fever. With the help of this study, early diagnosis and alternate method of treatment without any side effects can be established to prevent death.

### **AIMS AND OBJECTIVES**

1. To understand etiological factors of Dengue fever in terms of Ayurveda.
2. To understand the Ayurvedic pathogenesis (*Samprapti*) of Dengue Fever.
3. Management of Dengue fever through ayurveda (*Samprapti Vighatan*).

### **MATERIAL AND METHODS**

This article is based on review of Ayurvedic texts. The main Ayurvedic texts used in this study are *Charak Samhita*, *Sushruta Samhita*, *Astang Sangrah* and available commentaries on these. I have also referred to the modern texts and searched various websites to collect information on the relevant topic.

### **Etiology (Hetu)**

According to Ayurveda, disease is caused only when there is lack of immunity in the body. In this ancient science of healing, the concept of immunity is based on the *beej-bhumi* (seed-land) theory.<sup>[2]</sup> When the land (body) is fertile (laden with toxins or *ama* which get accumulated due to improper digestion), all the seeds (viruses) are able to grow easily. In contrast, when the land is infertile, lesser number of seeds germinates. This means, when the human body contains *ama*, it becomes a fertile breeding ground for different kinds of viruses. On the other hand, *ojas* is the product of a healthy digestive system, which helps the body in resisting infection. Low *ojas* is lack of immunity at the physical level and absence of mental strength at the mind level. Dengue can affect anyone but tends to be more severe in people with compromised immune systems.

Due to Virus infestation and irregular nature of fever it can be co-related with *Agantuj Visham Jvara* described in Ayurvedic text. *Hetu* of *Agantuj Visham Jvara* has been described. Intermittent fever as caused by invasion of evil spirits or micro-organisms.<sup>[3]</sup> It is called *Visham Jvara* because of the irregular onset, action, time and reappearance.

### **Pathogenesis (*Samprapti*)**

Ayurveda an ancient healing system refers fever as *jvara*, a condition in which the body temperature goes beyond the normal temperature and is characterized by disturbance in normal functioning of the system. Fever occurs when the digestive fire (*agni*) and digestive toxins (*ama*) which are normally found within the gastrointestinal tract are thrown out of their place by disrupted *doshas* and then they overflow into the blood and lymphatic system.<sup>[4]</sup>

Due to Virus infestation and irregular nature of fever it can be co-related with *Agantuj Visham jvara* described in Ayurvedic text. The concept of *Agantuj Visham jvara* has been explained in Ayurvedic text ;*Sushrut Sanhita Uttar Tantra* 39/56,68.<sup>[5]</sup>

In intermittent fever evil spirits (micro-organism) or nature is declared as cause by certain scholars; generally, in such fever there is association of extrinsic factor. *Acharya Dalhan* have described '*paro hetu*' as '*bhoot*' i.e. microbes.

Some hold intermittent fever as caused by invasion of evil spirits (or micro-organisms).

If we go through features of *Rakta dhatwashray jvara*,<sup>[6]</sup> *Hoemoptysis*, burning sensation, perspiration, vomiting, giddiness, delirium, boils and thirst- these are symptoms of fever located in blood.<sup>[7]</sup> These features are very much similar with features of Dengue/ Hemorrhagic fever.

According to Ayurveda, in cases of dengue; virus infestation throws *Pitta* out of balance, leading to destruction of platelets.

### **Management**

According to Ayurveda spread of dengue can be prevented by strengthening the *ojas* and enhancing body immunity. Ayurveda is a practical, medical science which promotes perfect health through prevention and cure health problems by recommending lifestyle changes. Ayurveda, hygiene, lifestyle and diet are crucial to good health. To attain good health, Ayurveda prescribes the specific daily routine *Dincharya* and the seasonal regime *Ritucharya*.

Cases of dengue fever usually rise during and just after the rainy season or June through October in India and it can be prevented by herbal fumigation using herbs like *Azadirachta indica*, *Acorus calamus*, *Brassica campestris*, *Terminalia chebula* and *Saussurea lappa*.<sup>[8]</sup>

In general principal of ayurveda; Fever (*Jvara*) can be managed by:

Fasting (*langhana*), Sudation (*swedana*), Time- Waiting/Patience (*kala*), Light diet (*yavagu*), Bitter drugs (*tikta bhashajam*) and Detoxification (*ama pachana*), Yogasanas (*Charak Chikitsa 3/142*).

Dengue fever is usually mild and self limiting illness in most people. Several Ayurvedic herbs like *Tulsi*(*Ocimum sanctum*), *Gurach*(*Tinospora cardifolia*), *Parpatak* (*Fumaria officinalis*), *Kiratatikta* (*Bhunibha*, *Swertia chirata*), *Pippali* (*Piper longum*), *Dhaniya* (*Coriandrum sativum*), *Neem*(*Azadirachta indica*), *Shunti* (*zingiber officinale*), *Kālamegha* (*Andrographis pani*), *Musta*(*Cyperus rotundus*) etc. have been described to be effective in the treatment of fever.<sup>[9]</sup>

The juice of papaya leaf has been found to be useful in the treatment of dengue fever. A number of scientific papers have proved that papaya leaf juice is actually beneficial for the body. Few recent studies have shown the effect of papaya leaf juice in curing the dengue fever. A recent one, done on five dengue patients by Indian Institute of Forest Management in 2012, found interesting observations. Among the five patients, papaya leaf juice was found to be effective in curing dengue. The platelet count increased in all five patients within 24 hours of drinking the papaya leaf juice. All of them reported significant improvement in health.<sup>[10]</sup>

A 2009 study, done on mice in Malaysia, reported significant improvement in thrombolytic count in the group which received papaya leaf formulations compared to the control group. It seems that this bitter green juice is promising without posing any serious ill-effects.

## RESULTS AND DISCUSSION

Symptoms of *Rakta dhatwashray jvara* like *Hoemoptysis*, burning sensation, perspiration, vomiting, giddiness, delirium, boils and thirst are very much similar with Dengue Fever (*Dengue Hemorrhagic Fever*).

*Acharya Charaka* has mentioned *Vishamajwara* and *Chakrapani* have commented on *Vishamajwara* as *bhootanubandha*. *Acharya Susruta* affirmed that *Aagantuchhanubhandohi praysho Vishamajware*. *Madhavakara* has also recognised *Vishamajwara* as

*Bhutabhishangjanya*<sup>[11]</sup> (infected by microorganism). Involvement of microbes has been told in Classical Text of Ayurveda as “*paro hetu*” i.e. “*bhoot*”.

Dengue fever is a fatal illness affecting larger part of population. *Acharya charak* have described about “*Janopadhodhwansa*”<sup>[12]</sup>; (chapter on epidemics) is dedicated to diseases causing epidemics. It says that when air, water, country and time get polluted, they cause diseases. *Aedes* mosquito breeds in clean, stagnant water and spread dengue virus to larger population.

According to Dr Rai Tulsi causes the body to perspire, which leaves a lot of salt on the upper layer of the skin. The mosquito would not bite on the skin which has perspired. "Exactly for the same reason, the people from the lower economic group and labor class did not fall sick due to dengue. Due to excess physical labor, they perspire a lot which leaves a lot of salt on their skin,"

Papaya leaves are known to be packed with the enzymes like *chymopapain* and *papain*<sup>[13]</sup> that, according to Dr Sanath Hettige, normalize the platelet count, improves the clotting factor (Helps the blood clot normally), improves one's liver function and repairs the damage to the liver done by dengue, therefore helping an ailing person recover from the disease.

Recent studies have shown that papaya leaves contain complex substances that may support the release and production of platelets by the bone marrow. A breakthrough study by Dr. Sanath Hettige of Srilanka indicates that papaya leaf extract helps to "normalize clotting and repair liver damage caused by dengue". Dr Hettig's controlled clinical trials of about 70 dengue patients found that the patients who were given papaya leaf extract recovered fully within two days without hospital admission. It is important to take papaya leaf juice at the early stages of dengue, before the disease progresses and damages vital organs.

## CONCLUSION

This study gives an overview of elaborate understanding of Dengue fever through Ayurveda. Due to Virus infestation and irregular nature of fever it can be co-related with *Agantuj Visham Jwar* described in Ayurvedic text.

Ayurveda has many herbal and herbo-mineral formulations in different dosage forms for the treatment of Dengue fever. In spite of several clinical trials there is need of more clinical trials and pharmaceutical studies to establish their *pharmacokinetic* and *pharmacodynamic*

properties on modern parameters. By using these drugs alone or as adjuvant with modern drugs Dengue fever can be controlled and cured.

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