



Clinical Efficacy of Balaguduchyadi Kashaya in Dengue Fever in School Students

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Abstract

Dengue fever is communicable disease caused by dengue virus called Aaegepti spread by mosquito, so there is no vaccine and it is particularly difficult to create vaccine because it is caused by different virus and no animal models available for testing. It is also called as 'breakdown fever' and 'dandy fever' [1-2]. Approximately 390 million people worldwide infected each year and the disease kills over 5000 Indians every year and is a seasonal threat particularly during monsoon. Symptoms will manifest in 3 phases febrile phase-high fever(104.F), muscle and joint pains, headache, measles like rashes, nausea, vomiting, bleeding from mucous membrane of mouth and nose, decreased platelets within 2-7 days, critical phase – blood in vomitus, dark colored stools, severe abdominal pain, restlessness which leads to serious complications and even death and recovery phase [3-4]. As it is caused by virus, so there is no specific medicine or antibiotic to treat it. For typical dengue fever, treatment is purely concerned with relief of symptoms.

In Ayurveda there are several yoga's which overcome this disease, one such preparation is Balaguduchyadi kashaya – a anubhuta yoga found more effective, consists of bala, guduchi, yashti madhu, musta, chandana, trikatu etc. drugs are having tikta pradhana madhura rasa, sheeta teekshna guna and contains properties like jwaragna, tridoshahara, rasayana, hrudya, balya raktapittahara and proved to be having anti pyretic, analgesic, anti microbial, anti typhoid, immunomodulatory, muscle relaxant properties also. The study was conducted on 10 Students by giving Bala guduchyadi kashaya in the dose of 15ml with honey 2 hourly once for 3 days and then decreased gradually up to 1 week, reduction in signs and symptoms of the disease along with gross increase in platelets within 2 days were noticed. Statistical paired t test is applied which revealed significant result.

Keywords: Dengue; Platelet count; Bala guduchyadi kashaya

Introduction

Dengue fever is one of the life threatening diseases caused by dengue virus (Flavivirus) that is borne and transmitted by mosquitoes within the genus Aedes, principally A. aegypti. Dengue is prevalent throughout the tropics and subtropics. It infects 50 to 390 million people worldwide a year, leading to half a million hospitalizations and approximately 25,000 deaths. There are approximately 390 million people worldwide infected with the dengue virus each year. Approximately 2.5 billion people, or two-fifths of the world's population, are now at risk from dengue which has following symptoms like: In Ayurveda the symptoms of these three phases can be seen accordingly like febrile phase: dainya, udwega, chardi, arochaka, bahistapa, angamarda of rasa dhatugata jwara1, critical phase: rakta, ushna pidaka, sarakta shtivana muhu,

daha, raga, brama of rakta dhatugata jwara2 and recovery phase: vireka vamane ubhe, asthi bheda, gatra vikshepana, shwasa of asthigata jwara3 Grossly symptoms of dengue fever can be seen as kshane daha kshane sheeta, asthi sandhi shiro ruja, sasrava rakta, nirbugne darshana, kanta shuka, avruta, kasa, shwasa, aruchi, shtivanam raktapitta, trushna, nidranasha, hrudi vyatha, kota, shyava rakta mandala of sannipata jwara4.

Need for ayurvedic therapies

There is currently no vaccine for dengue fever. Because it is caused by a virus, there is no specific medicine or antibiotic to treat it. For typical dengue fever, the treatment is directed toward relief of the symptoms. Prevention thus depends on control of and protection from the bites of the mosquito that transmits it.

Objectives of the study

- To evaluate the efficacy of Balaguduchyadi kashaya in symptoms of Dengue fever.
- To evaluate the efficacy of Balaguduchyadi kashaya on platelet count in Dengue fever.

Materials and Methods

Source of data

10 Students of Dengue fever coming under the inclusion criteria were selected for the study.

Method of collection of data

This is an observational clinical study with pre-test & post-test design where in 10 diagnosed Dengue fever students of either sex were taken for study.

Following statistical methods was employed for the data collected-Paired sample 't' test.

Diagnostic criteria

High grade fever with chills

- Fatigue.
- Headache.
- Fibromyalgia.
- Decreased platelet count.

Inclusion criteria

- Students presenting with the sign and symptoms of Dengue fever.
- Students of either sex.
- Students between the age up to 18 years were selected for the study.

Exclusion criteria

- Students suffering with any other serious systemic illness.
- Platelet count below 30,000.
- Students with severe hemorrhage.
- Students with severe rashes.
- Students with Dengue shock syndrome.

Design of the study

It is an observational study of Balaguduchyadi kashaya in the management of Dengue fever where in pre-test and post-test design was done. Minimum of 10 Students were selected for the study.

Duration of the study

The duration of study ranges from 3 to 7 days or until raise in platelet count and follow up is up to 21 days.

Intervention.

Method of preparation

One part of Kashaya churna was taken and 4 parts of water was added and reduced to half part and then it is filtered. Daily fresh kashaya was prepared and used.

Method of administration

Dose of Balaguduchyadi kashaya was 15ml for every 2hrs in a day with 5 ml of honey for 3-7 days. Then duration should be reduced to 4th hrly for next 7 days, then twice daily for next 7 days.

Assessment criteria

The following Subjective and Objective parameters was assessed using different grading and scoring methods before and after the treatment.

Fever

- 0 – 98.F
- 1 – 99.F – 100.F
- 2 – 101.F – 102.F
- 3 – 103.F – 104.F
- 4 - > 104.F

Fibromyalgia

- No pain at rest and working.
- No pain at rest and mild pain while working.
- Mild pain at rest and moderate pain while working 3 – severe pain disturbs sleep.
- Intolerable pain.

Fatigue

- No fatigue.
- Mild fatigue after work.
- Moderate fatigue after work 3 – severe fatigue after work.
- Severe fatigue without work.

Platelet count

- 4 - < 50,000
- 3 – 51000 – 1 lakh
- 2 – 1,11000 – 1,50000
- 1 – 1,51000 – 2 lakh
- 0 - >2 lakh

Discussion

The World Health Organization's 2009 classification divides Dengue fever into two groups: uncomplicated and severe (Table 1).

Dengue can affect anyone but tends to be more severe in people with compromised immune systems. Because it is caused by one of five serotypes of virus, it is possible to get Dengue fever multiple times. Regarding its pathology Dengue virus is primarily transmitted by Aedes mosquitoes, particularly A. aegypti. These mosquitoes usually bite during the day, particularly in the early morning and in the evening, and thus spread infection at any time of day all during the year (Figure 1). When a mosquito carrying dengue virus bites a person, the virus enters the skin together with the mosquito's saliva

(Table 2). It binds to and enters white blood cells and reproduces inside the cells while they move throughout the body. The white blood cells respond by producing a number of signaling proteins, such as cytokines and interferons, which are responsible for many of the symptoms, such as the fever, headache, rashes, severe pains and decreased blood platelet count are seen. Balaguduchyadi kashaya is one such anubhuta yoga is having an ideal combination to prevent.

Table 1: Contents of Balaguduchyadi Kashaya.

Drug	Botanical	Chemical	Karma	Part Used
	Name	Constituents		
Bala (1 part)	<i>Sida cardifolia</i>	Ephedrine, Vasicinone, Phytosterol	Balya, tridoshahara bruhmana, raktapitta, rasayana,	Mula
Guduchi (1 part)	<i>Tinospora cardifolia</i>	Tinosprin, Cordifoilide, Tetracosanoic acid	Dipana, jwarahara, vatarakta, krimi, pandu, chardi, hrudya	Stem, root
Yashtimadhu (1 part)	<i>Glycyrrhiza glabra</i>	Liquirtin, Glabrin, Liquirtic acid	Tridoshahara, rasayana, vishagna, kshaya, raktapitta, hrudya, chardi, bruhmana, shonita	Mula
Musta (1 part)	<i>Cyperus rotundus</i>	Cineol, Isocyperol	Kaphapittahara, rakta vikara, aruchi, pittajwara	Tuber
Ushira (1 part)	<i>Vetiveria zizanioides</i>	Benzoic acid, Isovalencic acid, Eugenol	Kaphapittahara, stambana, jwara, raktapitta	Mula
Chandana (1 part)	<i>Santalum album</i>		Angamarda, kaphapittahara, jwara, raktapitta	Mula
Lavanga (1/4 part)	<i>Syzygium aromaticum</i>	Eugenol, Caryophallene oxide, Furfural	Kapha, pitta, rakta hara, chardi, shoola, kshta ksahya, vishhara, ruchya.	Fruit
Shunti (1/8 part)	<i>Zigiber officinale</i>	Camphene, Gingerols, Glycolipids, Citral	Vata, kapha hara, hridya, rochana, vibandha, shoola hara, pandu, jwara hara.	Rhizome
Maricha (1/8 part)	<i>Piper nigrum</i>	Piperine, Citronellol, Camphene, Ascorbic acid.	Kapha, vata hara, krimi hara, hridya, shoolahara, ruchya, shosha, chardi.	Fruit
Pippali (1 part)	<i>Piper longum</i>	Caryophylline, Piperine, Sesamine, Essential oils.	Vata, kaphara, jwarahara, pitta virodi, rasayana, krimihara, ruchya.	Fruit

Table 2: Contents of Balaguduchyadi Kashaya.

Parameter	Mean	S.D.	S.E.	T value	P value	Remark
BT-AT1	0.9	0.73	0.23	3.85	< 0.05	S
BT-AT2	1.3	0.94	0.3	4.33	< 0.05	S
BT-AT3	2.1	0.87	0.27	7.57	< 0.001	HS

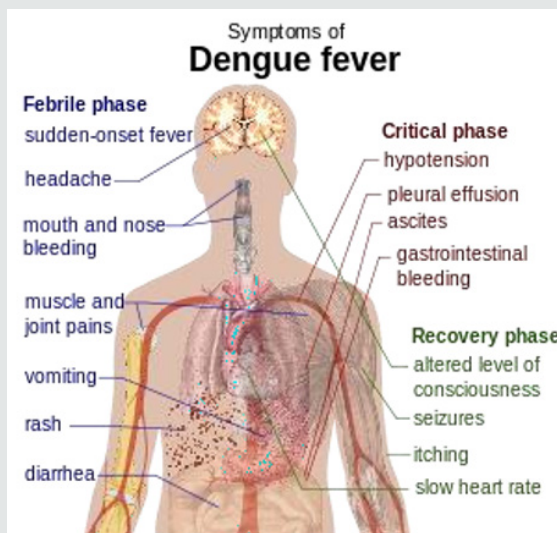


Figure 1: Ayurveda the symptoms of these three phases.

Dengue fever for the reasons

- a) it is having bala, ushira, chandana, lavanga contains rakta shodaka, stambana, raktapittahara effect which purifies the blood and stops bleeding.
- b) it is having guduchi, musta, maricha contains krimihara, bhutahara i.e., antiviral, antimicrobial effect which cures infection caused by virus.
- c) it is having guduchi, yashtimadhu, pippali contains tridoshahara, balya, bruhmana, rasayana, ojovrudhhi i.e., antioxidant, immunomodulatory effect which rejuvenates the body by improving natural or innate immunity. Thus, it is

proved to be effective.

Results

The observations made during the study were quite interesting. This study is mainly taken by concentrating on increase in platelet count. As per the medical report of Students the number of platelets had increased within the prescribed time (48hrs) of drinking Balaguduchyadi kashaya in all 10 Students of dengue (Table 3). The increase in number of platelets varied from Student to Student that ranged from 30,000 up to normal. The dengue Students had reiterated that there was a significant improvement in their signs and symptoms within 48 hrs of taking kashaya.

Table 3: Table showing the Result on Fatigue within the Group.

Parameter	Mean	S.D.	S.E.	T value	P value	Remark
BT-AT1	0.4	0.51	0.16	2.44	> 0.05	NS
BT-AT2	0.7	0.48	0.15	4.57	< 0.05	S
BT-AT3	2.1	0.56	0.17	11.69	< 0.001	HS

Conclusion

Preventive measures should be taken before spreading of any kind of disease including dengue fever (Table 4). The dengue mosquitoes breed in relatively fresh water, lives close to human habitations and bites during the day and one should be cautious

accordingly. In case of travelers returning from endemics and in homes of infection preventive measures should be taken (Table 5). So as preventive measure also Balaguduchyadi kashaya can be administered for 21 days twice daily. So Balaguduchyadi kashaya is helpful in both curative and preventive aspect.

Table 4: Table showing the Result on Fibromyalgia within the Group.

Parameter	Mean	S.D.	S.E.	T value	P value	Remark
BT-AT1	1	0.47	0.14	6.7	< 0.001	HS
BT-AT2	1.7	0.82	0.26	6.52	< 0.001	HS
BT-AT3	2.4	1.07	0.34	7.05	< 0.001	HS

Table 5: Table showing the Result on Fibromyalgia within the Group.

Parameter	Mean	S.D.	S.E.	T value	P value	Remark
BT-AT1	0.9	0.31	0.1	8.99	< 0.001	HS
BT-AT2	1.9	0.31	0.1	18.98	< 0.001	HS
BT-AT3	2.9	0.73	0.23	12.41	< 0.001	HS

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