

Siddha Medicine and Clinical Presentation of Dengue Fever at Tertiary Care Hospital of Chennai, Tamil Nadu, India

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Abstract Dengue fever is nowadays most common in metropolitan cities. It is an arthropod borne viral disease belongs to family flaviviridae, having four serotypes that spread by the bite of infected aedes mosquitoes. The present aim of the study to investigate outcome of dengue virus infection in patients on administration of Siddha herbal formulation (Nilavembu kudineeri). This prospective descriptive study was conducted in inpatients admitted at tertiary care hospital, with suspected dengue fever. However, case series was conducted at the department of Siddha medicine in collaboration with the general medicine department of MMC Hospital, Chennai, during the November-December months 2013 of Dengue fever. Clinically and serologically confirmed cases of dengue fever and who are willing to participate in the study were included. Data was analysed with graph pad prism version-5. Mean age of the patients was 34.37±17.54 years and majorities (15, 63%) were male. Seropositivity for dengue was found in 74%. The study did not find significant. Statistical associated with dengue seropositivity. Our study conclude that on administration of siddha herbal formulation (Nilavembu kudineeri) fever associated with chills and rigors, body aches, bone pain, headache, myalgia, rash, low platelet count, decreased TLC, raised serum ALT and Hemorrhagic manifestations are improved satisfactory in suspected dengue virus infection in 24 cases.

Keywords Gender; Nilavembu Kudineeri; Fever; Platelet Count; Family

1. Introduction

Dengue virus is a mosquito-borne virus (Flavivirus) spreads through Aedes aegypti mosquito. This mosquito is black in colour and lining on surface so it is called Tiger mosquito. These small (50 nm) viruses contain single-strand RNA. The virion consists of a nucleocapsid with cubic symmetry enclosed in a lipoprotein envelope [1]. The virus infects over 50 million people worldwide, resulting in over 24,000 deaths annually of people remain exposed to the disease across Africa, Eastern Mediterranean, Southeast Asia and Western Pacific region. It has 4 serotypes; infection with 1 serotype provides lifelong homotypic immunity, but there is only short-term cross-protective immunity against heterotypic serotypes. Though Dengue infections were reported in India since the late 1950s,

an upsurge in its activity has been noticed since the mid-1990s. India's population is twice that of Southeast Asia, these regions show the most dengue-related deaths. Dengue virus-specific antibodies, types IgG and IgM, can be useful in confirming a diagnosis in the later stages of the infection despite comparable environmental risk conditions, the number of reported cases and deaths in India is only a fraction of that reported in south-east Asia. In many regions of India, an increasing number of suspected cases of dengue are seropositive for IgM and IgG antibodies [2, 3]. Our study highlights that alternative system of medicine are to provide medicine or siddha herbal product which can cure dengue and should not be adversely affected the human body and kill the virus of dengue.

2. Materials and Methods

This case series was conducted at the department of Siddha medicine in collaboration with the general medicine department of MMC Hospital, Chennai, during the November-December months 2013 of Dengue fever. Data was collected from the inpatients admitted with Dengue fever in tertiary care hospital. The patients who presented with febrile illness, fulfilling the diagnostic criteria of Dengue fever according to World Health Organization and proven serologically positive for IgM, IgG anti Dengue antibodies (Confirmed by ELISA) or both and who were administered with siddha medicine along with allopathy medicine were included in the study. (Nilavembu kudineeri) NVK were supplied in the dry extract form by the dealer and claimed to contain an equal proportion of 9 ingredients of (*Andrographis paniculata* (AP), *Vetiveria zizanioides*, *Cymbopogon jwarancusa*, *Santalum album*, *Trichosanthes cucumerina*, *Cyperus rotundas* L, *Zingiber officinale*, *Piper nigrum* and *Mollugo cerviana* in NVK. The patients who were suffering from fever and thrombocytopenia due to any chronic illness like aplastic anemia, acute leukemia, and chronic liver disease were excluded from the study. Clinical data was recorded that included symptoms, signs and laboratory investigations. The patients were thoroughly examined for vital signs, anthropometry, skin rash, hepatosplenomegaly, ascites and pleural effusion. Investigations performed were blood counts, peripheral film, liver function tests, abdominal ultrasonography, chest X ray and IgM, IgG Anti Dengue antibodies (by ELISA method). Patients were treated symptomatically with intravenous fluids, antipyretics, antibiotics and antimalarials where indicated. Patients were followed with repeated leukocyte and platelet counts daily until they were in the normal range. Data was analysed by graph pad prim version-5, p value <0.05 was considered significant.

3. Results and Discussion

Fever is caused as a secondary impact of infection, malignancy or other diseased states. It is the body's natural defence to create an environment where infectious agent or damaged tissue cannot survive. It leads to enhanced, formation of pro-inflammatory mediator's (Cytokines like Interleukin-1 α β factor-alpha (TNFα and tumor necrosis)), which increase the synthesis of prostaglandin E2 (PGE 2) near peptic hypothalamus area, triggering the hypothalamus to elevate the body temperature. The inhibition of cyclooxygenase -2 (COX-2) expression leads to reduction in the elevated body temperature by inhibits PGE2 synthesis has reported as common mode of action of antipyretic agents [5, 6]. During the study period a total number of 39 patients admitted in different wards of tertiary care hospital whereas, we excluded 15 patients those who are not following the inclusion criteria. The mean age of our study populations was found to be 34.37±17.54 years. The region wise distribution of study population was assessed and found that 66%, where from rural and 33% urban background. Most of the patients belong to Hindu religion 58%, followed by Christian 25% and Muslims 17%. Furthermore, among the study population 67% were found to be married and unmarried 33%. Clinical features of all patient suffered from fever but no specific pattern could be identified degree was variable ranging from low to high grade. Abdominal pain was the next most

common symptom followed by vomiting and 87% patients complained of body aches and pains and 09% patients had hemorrhagic manifestations in the form of gum bleed and melena.

Neoandrographolide, one of the principal diterpene lactones, isolated from a medicinal herb *Andrographis paniculata* possesses significant anti-inflammatory effects [7, 8].

The most common clinical sign that we detected was the splenomegaly that was present in 54% of cases followed by pallor and then hepatomegaly 22%. Most of the patients 54% were from 17 to 30 years. Seropositivity (IgM) was found in 58% of the patients. Majority of patients had Hb less than <10gm%. Only 03 (12% patients) presented with Hb more than >10gm%. 58% patients had platelet count before administration of siddha medicine was found to be <50,000/cmm and after administration of siddha medicine [4] (Nilavembu kudineeri- 30ml) platelet count was increased 50,000 to 1,00,000/cmm. Not a single patient required platelet transfusion and no death encountered in this studies (Table 2 & 3).

Table 1: Sociodemographic Details of the Dengue Fever Patients Characteristics

Patient Characteristic	Number (N)	%
Number of patients included	24	62
Total mean age (Range)	34.37±17.54	
Mean age Male (Range)	31.93±15.65	
Mean age Female (Range)	36.20±20.63	
Gender		
Male	15	63
Female	9	38
Region		
Rural	16	66
Urban	8	33
Religion		
Hindu	14	58
Christian	06	25
Muslim	04	17
Marital status		
Married	16	67
Unmarried	08	33

Table 2: Laboratory Investigation of the Dengue Patients

Blood Chemistry	Number (N)	Percentage (%)
Haemoglobin		
<10gm%	16	67
>10gm%	8	33
<7gm%	-	
TLC /μL		
<4000	7	29
4000-11000	13	54
>11000	4	17
Platelets		
<50,000	14	58
50,000-1,00,000	8	33
1.00,000-1.5lakhs	2	08
Age (in years)		
15-30	13	54

31-50	05	21
51-70	06	25
Anti-dengue antibodies		
Igm Border line	06	26
Igm Positive	18	74

Table 3: Platelet Counts of Dengue Fever Patients on Administration of Siddha Medicine (Nilavembu kudineeri (30ml))

Platelet Range	Without Siddha Medicine	With Siddha Medicine Nilavembu Kudineeri (30ml)
<50,000	14 (58%)	-
50,000-1,00,000	8 (33%)	22 (92%)
1.00,000-1.5 lakhs	2	2 (8%)

4. Conclusion

Our studies conclude that on administration of siddha herbal formulation (Nilavembu kudineeri). Fever associated with chills and rigors, body aches, bone pain, headache, myalgia, rash, low platelet count, decreased TLC, raised serum ALT and Hemorrhagic manifestations are improved satisfactory in suspected dengue virus infection in 24 cases.

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