

# A Clinical Study on Etiopathogenesis and Clinical Features of Dengue Fever in a Teaching Hospital

C.R.P.S. Krishna<sup>1</sup>, Srikanth P<sup>1\*</sup>, Surya Pavan Reddy K<sup>2</sup>

<sup>1</sup>Professor, Department of Medicine, Geetanjali Medical College & Hospital, Udaipur, Rajasthan, India.

<sup>2</sup>Professor, Department of Medicine, Apollo Institute of Medical Sciences & Research, Chittoor, Andhra Pradesh, India.

## ABSTRACT

**Background:** Dengue Fever is an acute Febrile illness affecting the tropical and sub-tropical regions of the world. It is one of the important causes of Morbidity and Mortality worldwide and in India. It is caused by Flavivirus and transmitted by Aedes egypti Mosquito. Each year 70 million to 250 million cases are registered worldwide. It is endemic in India, Africa and Southeast Asia.

**Aim of the study:** To know the prevalence, Etiopathogenesis and clinical features of Dengue Fever in Teaching Hospital.

**Materials and Methods:** This study has been conducted for 1 yr from October 2021 to Sept. 2021 in the department of General Medicine, in Geetanjali Medical college, Udaipur.

**Results:** We have included 320 patients in our study out of these 320 Males were 195 and Females were 125. The age group included is between 20 and 70 years. 23 patients were died because of severity of the disease and other co morbid conditions.

**Conclusion:** Dengue Fever is very common in India especially during rainy seasons. It ranges from mild infection to Dengue

hemorrhage shock syndrome with the prevention of mosquito breeding points and mosquito bites, Dengue Fever can be easily prevented.

**Keywords:** Dengue Fever, Hemorrhage, Shock, Thrombocytopenia, Mortality.


## \*Correspondence to:

**Dr. Srikanth P,**  
Professor,  
Department of Medicine,  
Geetanjali Medical College & Hospital,  
Udaipur, Rajasthan, India.

## Article History:

Received: 03-12-2021, Revised: 27-12-2021, Accepted: 13-01-2022

## Access this article online

Website: <a href="http://www.ijmrp.com">www.ijmrp.com</a>	Quick Response code 
DOI: 10.21276/ijmrp.2022.8.1.009	

## INTRODUCTION

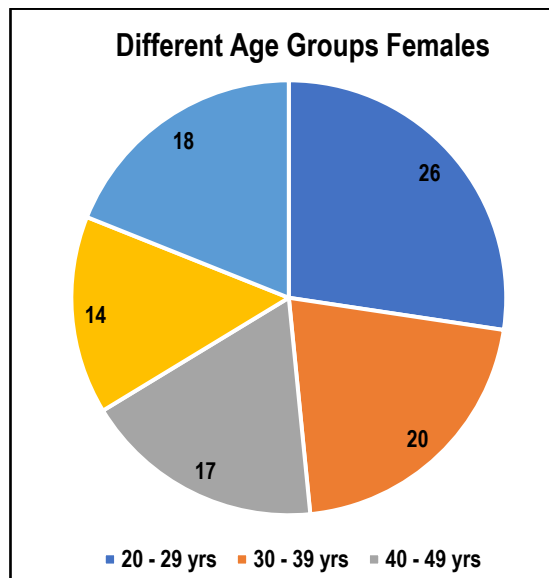
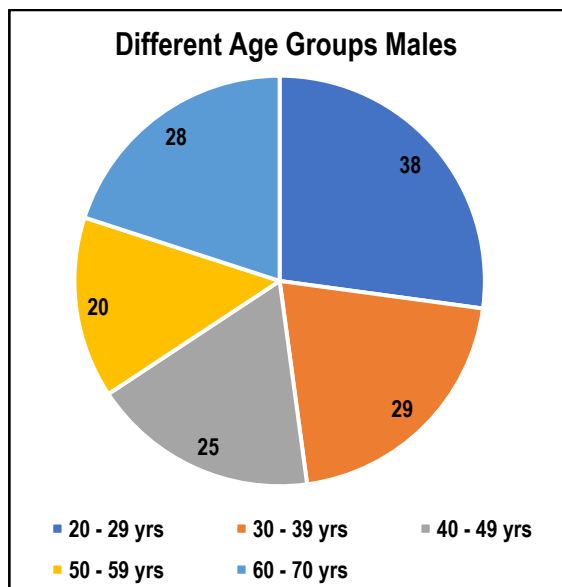
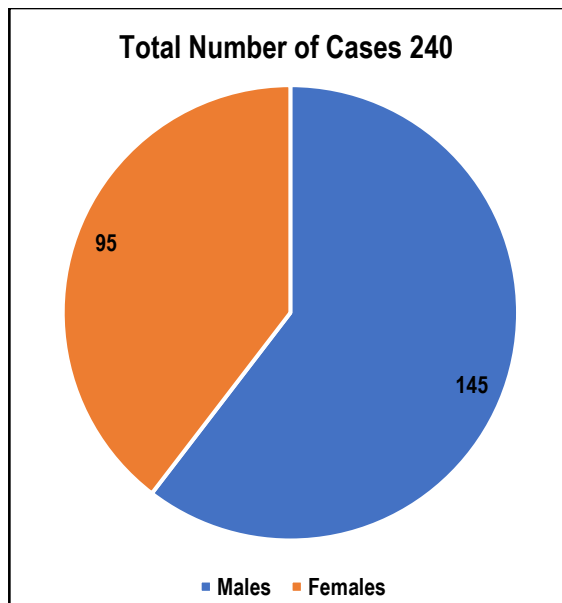
Dengue Fever is a common viral infection in India and worldwide also. It is caused by Flavy virus and transmitted by Aedes Egypti mosquito. This mosquito breeds in stagnating water, which is common in water-based air coolers, tire drums. In some Southeast Asia countries Ades Albopictitus is a vector. Dengue Fever has become a major public health problem causing significant morbidity and mortality, and also causes economic burden to the nation across the globe. Around 2.7 billion people are living in Dengue prone areas.<sup>1</sup> Dengue fever has been known to be pandemic in India for over two centuries as a begin and self-limited disease. In recent years, the disease has changed its course manifesting in the severe form ass Dengue hemorrhagic fever and increasing frequency of outbreaks.<sup>2</sup> Dengue fever in a previously nonimmune host produce a primary response of antibodies characterized by a slow and low titer antibody response. Ig M antibody is the first immunoglobulin isotype to appear. In a suspected case of Dengue, the presence of anti-dengue Ig M antibody suggests, recent infection. Anti dengue Ig M detection using enzyme linked. Immunosorbent assay (ELISA) represents on of the most important advances and has become an

invaluable tool for routine Dengue diagnosis.<sup>3</sup> There are 4 serotypes of Dengue virus, all producing similar syndromes. All serotypes are prevalent in India. Severe epidemics of Dengue hemorrhagic fever with serotype 3, occurred over the past 20 years in Sri Lanka, East Africa, India and Bangladesh. Dengue Fever is endemic in all the states in India, but more prevalent in Kerala, Karnataka, Tamil Nadu, less number of cases observed in UP and Haryana. In India 74, 168 cases were reported in 2013 and case Fatality rate is 0.22.<sup>4</sup> Dengue fever was first noticed in West Bengal in 1824 and several epidemics took place in the city during the year 1836, 1906, 1911 and 1972 effecting 10% of people in the state. In India Dengue Hemorrhagic Fever was first reported in Kolkata in 1963-64. There after several outbreaks occurred in India including Kolkata, following the last large outbreak in 2005.<sup>5</sup> The population of Aedes Egypti Fluctuates with rainfall and water storage. Its life span is influenced by temperature and humidity, survives best between 16 c and 30 c. The common clinical features include Fever, which is high grade, associated with chills break bone type of headache, most of the symptoms are nonspecific and self-limited, Dengue hemorrhagic

Fever is usually affects children, living in endemic area & is most likely to occur in secondary infection with serotype 2. After few days signs of hemorrhage such as ecchymosis, gastrointestinal bleeding, epistaxis, Ascites, conjunctivitis congestion, and decreased level of consciousness.

**MATERIALS & METHODS**

This study has been conducted for 1 year from July 2020 to June 2021 in Geethanjali Medical College, Udaipur in the department of General Medicine. We have included 240 cases, out of these 240, Males were 145 and Female patients were 95. The age group involved is between 20 years and 70 years. The common age group is 3<sup>rd</sup> and 4<sup>th</sup> decade. Informed consent has been obtained from the patients by giving consent form in their local language. After taking history, we have examined all the patients in detail and blood samples has been send for the investigations. The investigations advised are completely blood picture, including platelet count, RBS, Blood urea, serum creatine, serum electrolytes, and Sero Markers of Dengue IgM and NS1 antigen. The entire data has been collected systemically and computerized by using MS office.



**Table 1: Different age groups**

Age Groups In Year	(n) Males 145	(n) Female 95
20-29yr	38 (26.20%)	26 (27.36%)
30-39YR	29 (20%)	20 (21.5%)
40-49YR	25 (17.24)	17 (17.89%)
50-59 YR.	20 (13.79%)	14 (14.73%)
60-70YR	28 (18.25%)	18 (18.94%)

**Table 2: Clinical Features**

Clinical Features	(n) (M)145	(n) (F) 95
High Grade Fever	145 (100%)	95 (100%)
Body pains	127 (87.5%)	82 (86.31%)
Pain abdomen	29 (20%)	23 (24.21%)
Ecchymosis and others	21 (14.48%)	14 (14.73%)

**Table 3: Investigations**

Investigations	(n) (M)145	(n) (F) 95
Ig M Reactive	82 (56.56%)	59 (62.5%)
NS1 Reactive	63 (43.4%)	36 (37.89%)
Thrombocytopenia	21 (14.4%)	14 (14.7%)

**Table 4: Different complications**

Complications	(n) (M)145	(n) (F) 95
Pain abdomen	29 (20%)	23 (24.737%)
Ecchymosis	21 (14.48%)	14 (14.73%)
Ascites	16 (11.03%)	11 (11.57%)
Altered Sensorium	9 (6.20%)	5 (6.25%)

**RESULTS AND DISCUSSION**

We have included total 240 patients. Out of these 240, 145 were males and 95 patients were females. The common age group involved is 3<sup>rd</sup> and 4<sup>th</sup> decade. 46.5% of male patients and 49.8% of female patients are affected in this age group. The study conducted by S. Balyya et al shows 51.2% males and 42.7% females are in those age group.<sup>6</sup>

The studies conducted by Gupta et al shows highest number of cases were recorded in 18-30 years.<sup>7</sup> The common clinical Features noted in our study are fever which is high grade and sometimes associated with chills and rigors and sometimes it is called Break bone fever. Fever is seen almost in 100% cases. Body pains in 87.5% in Male patients and 86.31% in female patients, pain abdomen was noted in 20% of Male patients and 24.21% of female patients. Ecchymosis, plural effusion, Ascites were in 14.48% of Males and 14.73% of female patients. The studies conducted by Sarkar et al shows fever is 97% Body pains in 86.5% ecchymosis in 11.9% patients.<sup>8</sup> 23 patients were died because of severe Infects with Dengue shock syndrome and other co morbid Conditions like Diabetes, Renal Failure. In the investigations Ig M was reactive in 56.5% of Males and 62.5% in females NSI antigen was reactive in 43.4% in males and 37.89% in females patients and thrombocytopenia was noted in 14.4% of Males and 14.7% of Female patients. Spontaneous bleeding was noted when absolute platelet count was decreased to 25000/cum, and collection in serous cavities also noted.

Dengue Fever is caused by Flavivirus. It is a common viral infection in India, Sri Lanka, Bangladesh. It causes high mortality and morbidity. Dengue is endemic in all states in India, especially, Karnataka, Kerala, and Tamil Nadu. The increase in cases of Dengue fever is due to change in climatic factors and urbanization. The vector *Aedes Egyptie* breeds in stagnating water like water containers, air coolers, tyre dumps. The population of *Aedes Egyptie* fluctuates with rainfall and water and storage. Its life span is influenced by temperature and humidity.<sup>9</sup> The incidence of Dengue is common throughout the year particularly more in July or August month at the onset of monsoons. 4 serotypes are identified. All serotypes 1,2,3,4 is reported from different states in India. Flavy virus is single strand RNA virus that form particles of 40 to 50microns in the endoplasmic reticulum. Dengue is emerging as a Major public health problem in India and worldwide also. India witnessed widespread Dengue Fever out breaks in the year 2012.

Tamil Nadu reported highest number of cases in the country being 9249 followed by west Bengal which reported 6,067 cases. The incubation period is between 2-7 days clinical features include high grade fever headache, retroorbital pain and back pain along with severe myalgia that gives rise to the colloquial designation break bone fever. Additional symptoms include nausea vomiting's, and Maculopapular rash. The study conducted by Salmon et al shows ecchymosis and collection of fluid in the serous cavities in the form of ascites and plural effusion.<sup>10</sup> Among the patients investigated by VRDLs dengue positivity was higher in males as compared with females. The pattern of male predominance is consistent with the reports from several other countries and could be on the account of greater exposure of males to dengue carrying mosquitoes. We observed that Dengue positivity increased from August onwards and peaked during October corresponding to rainy and post rainy seasons. In India the laboratory capacity for diagnosis of outbreak under the integrated disease surveillance program is variable in different states. The studies conducted by Rauth DK et al shows almost similar results.<sup>11</sup> The major pathological hall mark in DHF is plasma leakage as a result of increased vascular permeability following this leakage, hypovolemic shock occurs, as a hypovolemic shock occurs, as a consequence of a critical plasma volume loss.

Constant homological changes are bone marrow suppression, leucopenia, thrombocytopenia, an enhanced immune response of the host to a secondary DV infection is a feature of DHF and leads to many consequences.<sup>12</sup> The mechanisms underlying the bleeding in DHF are multiple these are vasculopathy, thrombopathy and disseminated intravascular coagulation. Thrombopathy consists of thrombocytopenia and platelet dysfunction. The most severe DIC and massive bleeding are the results of prolonged shock and cause of a fatal outcome.

## CONCLUSION

Dengue fever is very common in India. It varies from Mild infection to severe infection in the form of Dengue hemorrhagic fever which has bad prognosis, and it commonly effects young people. The vector mosquitoes are breeds on stagnating water. With prevention of mosquito bites and early treatment morbidity and mortality can be reduced.

## REFERENCES

1. Reiter. P. Climate change and mosquitoes borne disease. Environment health prospect. 2001' 109:141-6.
2. Gupta E, Dar L, Sero diagnosis of Dengue during an outbreak at a tertiary care hospital in Delhi. Indian.J.Med.2005; 121:36-8.
3. E. Gupta, L Dar, The changing epidemiology of Dengue in Delhi, India, Virology Journal Vol. 3, article 92; 2006: 13-6.
4. BK Aikat, G. Benerjee Hemorrhagic Fever in Calcutta area. The Indian Journal of Medical Research 1964; 52: 660-675.
5. A.K. Hati Dengue Searo Surveillance in Kolkata, facing an epidemic in west Bengal, India Journal of vector born diseases. 2009; 46(3): 197-204.
6. S. Balyya, SD Paul, K.M. Pavri, investigations on out break of Dengue in Delhi in 1967 The Indian Journal of Medical Research 1969; 57(4):767-74.
7. Gupta. L, AK Haki, Studies on Dengue hemorrhagic fever in West Bengal Indian Journal of Communicable Diseases 2006; 38(2): 124-9.
8. A. Sarkar, D. Taraphdar. Molecular typing of Dengue Virus in circulating in Kolkata, India in 2010, Journal of Tropical Medicines 2012; Article ID 960329, 5 pages.
9. World Health Organization. Dengue and Severe Dengue fact sheet no.117.Fab 2014.
10. Solmon et al. Pathogenesis and Clinical features of Dengue Hemorrhagic Feaver. BMJ; 2003; 326:865.
11. Rauth DK, Bhola A. Integrated disease surveillance in India. Global J. Med public health 2014; 3;24-26.
12. Davidson principle of medicine; 24 edi 2016; chap 5;126-9.

**Source of Support:** Nil.

**Conflict of Interest:** None Declared.

**Copyright:** © the author(s) and publisher. IJMRP is an official publication of Ibn Sina Academy of Medieval Medicine & Sciences, registered in 2001 under Indian Trusts Act, 1882. This is an open access article distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

**Cite this article as:** C.R.P.S. Krishna, Srikanth P, Surya Pavan Reddy K. A Clinical Study on Etiopathogenesis and Clinical Features of Dengue Fever in a Teaching Hospital. Int J Med Res Prof. 2022 Jan; 8(1): 40-42. DOI:10.21276/ijmrp.2022.8.1.009