# A Study of Clinical Profile of Dengue Fever in a Tertiary Care Teaching Hospital Bikaner

Dr. Ashok Singhal[1], Dr. Rohitash Kularia[2], Dr. Subhash Chandra[3],  Dr. Ravindra Jangir[4], Dr. Raghuveer tunwal[5],  Dr. Kaluram Daiwal[6]

[1, 5, 6] Resident doctor, [2]Associate professor & Unit head, [3-4] Assistant professor

[1-6] Department of General Medicine, Sardar Patel Medical College, Bikaner, Rajasthan

**Corresponding Author:** Dr. Rohitash Kularia, Associate professor & unit head, Department of General Medicine, Sardar Patel Medical College, Bikaner, Rajasthan

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## Abstract

**Background:** Dengue infection is a major health problem in our country. Globally the incidence of dengue has increased in the recent years. The WHO estimates that presently about two fifths of the world population is at risk for this viral infection.

**Material and Methods:** The study was undertaken as a hospital-based descriptive study with prospective data collection. The information was collected using a questionnaire developed and based on a review of literature. Hundred patients with confirmed dengue fever admitted to tertiary care hospital during a one year period from Oct. 2018 to Sept. 2019 were selected for this study.

**Results:** Fever (100.00%) was most common symptoms followed by headache (83.00%), bodyache (81.00%), nausea/ vomiting (68.00%), retro-orbital pain (42.00%), pain abdomen (37.00%) and pleural effusion (22.00%).

**Conclusion:** . Dengue is one of the major causes of undifferentiated fever. It presents as a highly unspecific illness and is hardly recognized as a clinical entity by primary health care physicians.

**Keywords:** Fever, Dengue Haemorrhagic Fever, Dengue Shock Syndrome.

## Introduction

Dengue infection is a major health problem in our country. Globally the incidence of dengue has increased in the recent years. The WHO estimates that presently about two fifths of the world population is at risk for this viral infection[1]. Dengue was first reported in 1780, when Benjamin Rush described this condition as "break bone fever". It is a mosquito borne viral infection with four serotypes causing dengue fever (DF), dengue hemorrhagic fever (DHF), and dengue shock syndrome (DSS) [2] It is estimated that worldwide nearly 2.5 billion people continue to live at risk of contracting the infection while 50 million cases and 24,000 deaths tend to occur in 100 endemic countries. Risk of mortality in treated cases of DHF/DSS is 1% while mortality rate among untreated cases escalates to 20% [3]

According to the US Centers for Disease Control and Prevention (CDC) and the WHO dengue guidelines, the clinical features of DF and DHF are sudden onset of fever, severe headache, myalgias and arthralgias, leucopoenia, thrombocytopenia, and hemorrhagic manifestations. It occasionally produces shock and

haemorrhage, leading to death. Classic DF symptoms include fever, headache, retro-orbital pain, myalgias and arthralgias nausea, vomiting, and often a rash. Some DF patients develop the more serious form of the disease DHF with symptoms that include a decline in fever and presentation of hemorrhagic manifestations, such as microscopic hematuria, bleeding gums, epistaxis, hematemesis, malena, and ecchymosis. DHF patients develop thrombocytopenia and hemoconcentration; the latter is due to an increase in the concentration of blood cells resulting from the leakage of plasma from the bloodstream.[4]

In this study, we analyzed the variation in clinical features of DENV-infected patients at Sardar patel Medical College and PBM Hospital, Bikaner.

**Materials and Methods**

The study was undertaken as a hospital-based descriptive study with prospective data collection. The information was collected using a questionnaire developed and based on a review of literature. Hundred patients with confirmed dengue fever admitted to tertiary care hospital during a one year period from Oct. 2018 to Sept. 2019 were selected for this study. NS1 antigen and IgM dengue antibody-positive cases were included. These patients were admitted with fever, myalgia, headache, vomiting, abdominal pain or bleeding manifestations. NS1 antigen and IgM dengue antibody was estimated using capture ELISA. The diagnosis of dengue fever, dengue hemorrhagic fever and dengue shock syndrome was based on the WHO criteria [3].

Only those patients were included in the study with classical features of dengue – fever with chills, body ache, headache, rash, bleeding manifestations and thrombocytopenia and had a positive ELISA test. Patients who had malaria and enteric fever were excluded from the study. Detailed history and clinical examinations were done. A complete blood count, liver function tests, renal function tests, chest X-ray and USG abdomen were also done.

**Results**

Table 1 : Socio-demographic profile

| Variable | No of cases | Percentage |
|---|---|---|
| Male | 64 | 64.00% |
| Female | 36 | 36.00% |
| Mean age | 30.28±6.89 Yrs | |
| Urban | 58 | 58.00% |
| Rural | 42 | 42.00% |
| Hindu | 87 | 87.00% |
| Muslim | 13 | 13.00 |

In present study most of patients were hindu male and mean age of patients was 30.28±6.89 Yrs.

Table 2: Clinical profile

| Clinical profile | No of cases | Percentage |
|---|---|---|
| Fever | 100 | 100.00 |
| Nose bleeding | 4 | 4.00 |
| Ascites | 19 | 19.00 |
| Pleural effusion | 22 | 22.00 |
| Headache | 83 | 83.00 |
| Bodyache | 81 | 81.00 |
| Nausea/ vomiting | 68 | 68.00 |
| Retro orbital pain | 42 | 42.00 |
| Haematuria | 13 | 13.00 |
| Malena | 9 | 9.00 |
| Acalcular cholecystitis | 7 | 7.00 |
| Abdominal pain | 37 | 37.00 |
| Splenomegaly | 9 | 9.00 |
| Lymphadenopathy | 3 | 3.00 |
| Haemoptysis | 7 | 7.00 |
| Gum bleeding | 11 | 11.00 |
| Hepatomegaly | 10 | 10.00 |
| Patechiae | 14 | 14.00 |

Fever (100.00%) was most common symptoms followed by headache (83.00%), bodyache (81.00%), nausea/ vomiting (68.00%), retro-orbital pain (42.00%), pain abdomen (37.00%) and pleural effusion (22.00%).

## Discussion

Study was done at P.B.M. Children Hospital, Bikaner. Total 100 patients was amitted from Oct. 2018 to Sept. 2019 with serological diagnosis of dengue infection.

According to presenting complaints, Fever (100.00%) was most common symptoms followed by headache (83.00%), bodyache (81.00%), nausea/ vomiting (68.00%), retro-orbital pain (42.00%), pain abdomen (37.00%) and pleural effusion(22.00%).

The pathogenesis of DENV is poorly understood. A complex interaction between immuno-pathologic, viral, and human genetic factors results in a varied DENV disease outcome, which may explain the varied range of clinical presentations observed in this retrospective analysis. A possible reason for the significant differences seen in the clinical expression of the disease may be due to infection with different DENV serotypes and the possibility of concurrent infections with more than one serotype. Co-circulation of multiple DENV serotypes has been reported from many parts of the world, including India during an outbreak of DHF/DSS in 2006. Co-circulation of multiple DENV serotypes would result in an increased risk of concurrent infections.[5,6]

There is, however, limited documentation describing concurrent infections with more than one serotype in the same individual. [7,8] Furthermore, as already alluded to, sequential infection with more than one serotype is thought to be a major factor for the emergence of DHF.[9] Both primary and secondary infection by any of the four DENV serotypes can cause DF and DHF; however, virus virulence is not the only factor to explain differences in host susceptibility to the disease and disease severity. Host immune response variations have been associated with polymorphism in the human genome, which may help explain why some patients develop end-stage complications in dengue disease and others only experience a mild form of the disease. [10]

## Conclusion

Dengue is one of the major causes of undifferentiated fever. It presents as a highly unspecific illness and is hardly recognized as a clinical entity by primary health care physicians. This study highlights the clinician the importance of dengue fever to clinicians in the areas of epidemiology and manifestations.

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