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## Clinical profile of dengue fever in tertiary care hospital, Jamnagar Gujarat

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### Abstract

The study is aimed to compare the clinical profile of all patients diagnosed with dengue viral infection at tertiary care hospital during the peak months of epidemic. This Cross-sectional study included 250 patients infected with dengue virus, having age more than 12 years. Laboratory and haematological data were included. Peak incidence occurred in months of September, October, November and December. In the study majority of patients were male. Common clinical symptoms were fever, bodyache, nausea & vomiting, joint pain, retro-orbital pain and rash. Common haematological abnormalities were thrombocytopenia and leukopenia. Complications were haemorrhagic manifestations, dengue shock syndrome, ARDS, hepatic dysfunction. Death was reported in four cases.

**Keywords:** Dengue fever (DF), Dengue haemorrhagic fever (DHF), Dengue shock syndrome (DSS).

### Introduction

Dengue fever, caused by a mosquito-transmitted *flavivirus*, occurs in tropical and subtropical regions of the world [1]. Dengue virus having four serotypes causing dengue fever, dengue haemorrhagic fever and dengue shock syndrome. Dengue was first reported in 1780, when Benjamin Rush described this condition as "break bone fever" [4].

Dengue is a major health problem in Gujarat and all over India. India is one of the major country of south East Asia having highest incidence of dengue cases. Dengue incidence is gradually increasing every year. In 2015 highest incidence of cases were reported in Delhi, Punjab, West Bengal, Haryana, Gujarat, Maharashtra and Kerala. In Gujarat the number of dengue cases were double in 2015 as compared to 2014 but were less as compared to 2013 [5]. Infection with one serotype of dengue virus provides lifelong immunity to that serotype, but results only partial and transient protection against subsequent infection by other three serotypes [3]. It is well documented that sequential infection with different dengue virus serotypes increases the risk of developing DHF [4].

The exact clinical profile is important for patient management and for saving life. The present study tries to explain the clinical features and lab. Findings of serologically confirmed hospitalized cases of dengue fever.

### Materials and Methods

The study was undertaken as a hospital based cross-sectional study. The information was collected using a questionnaire and based on review of literature. Two hundred and fifty adult patients with confirmed dengue fever, admitted in tertiary care hospital in Jamnagar (Gujarat) during four months period from September to December 2015 were included. Dengue NS1 antigen and IgM antibody positive cases were included. These patients were admitted with complaints of fever, bodyache, nausea & vomiting, retro-orbital pain, abdominal pain and bleeding manifestations. The diagnosis of dengue fever, dengue haemorrhagic fever and dengue shock syndrome was based on the WHO criteria.

### Results

Out of 250 serological confirmed cases, 236(94.4%) cases were of dengue fever, 13(5.2%) cases were of dengue haemorrhagic fever, of which 3(23.07%) cases were having severe haemorrhagic manifestations and 1(.4%) case was of dengue shock syndrome.

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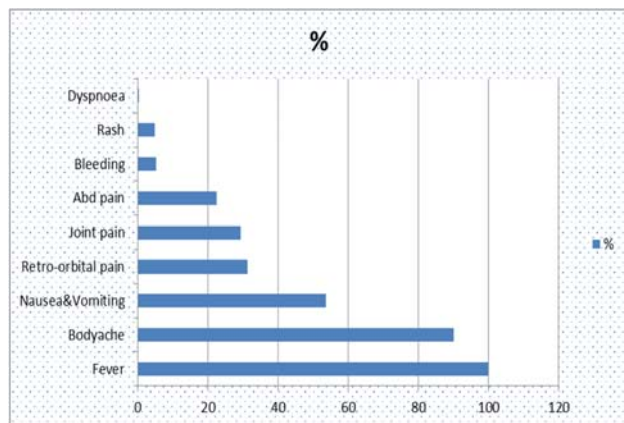
In this study total number of patients were 250 out of which 177(70.8%) were males and 73(29.2%) were females. Mean duration of symptoms were 4 to 7 days. In this study out of 250 patients 190 patients were NS1 antigen positive and 60 were IgM antibody positive. Out of 190 NS1 antigen positive patients 139 were males and 51 were females, similarly out of 60 IgM antibody positive patients 38 were males and 22 were females as shown in table 1.

**Table 1**

Serological Marker	Males	Females	Total
NS1 Ag	139	51	190
IgM Ab	38	22	60

**Clinical Features and Patients Characteristics**

Fever was documented in 250(100%) cases, followed by bodyache in 226(90%) cases. Nausea & Vomiting was noted in 134(53.6%) cases, retro-orbital pain in 78(31.2) cases, joint pain in 73(29.2%) cases, abdominal pain in 56(22.4) cases, rash in 12(4.8%) cases and dyspnoea in 4(1.6%) cases, as shown in fig.1



**Fig 1:** Clinical Manifestations

Bleeding manifestations were seen in 13 cases in the form haemoptysis in 6(46%) cases, gum bleeding in 2(15%) cases, melena in 2(15%) cases, haematemesis in 2(15%) cases, intracerebral hemorrhage in 1(7.6%) case. ARDS was observed in 2(.8%) cases. Bradycardia was noted in one patient which was later complicated with ventricular tachycardia. Death was reported in 4 patients. Tourniquet test was positive in 9(3.6%) patients. Low pulse pressure (<30mmHg) was observed in 45(18%) patients.

**Laboratory Parameters**

Haematocrit was measured in 250 patients, out of these 177(70.8%) were males and 73(29.2%) were females. Out of these 177 male patients, 28(15.8%) patients had haematocrit value more than 45 and 25(34.2%) patients out of 73 female patients had haematocrit value more than 40. Total WBC count was found to be less than 4000/cumm in 184(73.6%) cases. Platelet count was less than 1 lac/cumm in 217(86.8%) patients. Out of these 217 patients, 47(21.6%) patients had count less than 20,000/cumm, as shown in table no 2.

**Table 2:** Laboratory Parameters

Parameters	Percentage (%)
Raised Haematocrit	21.2
Thrombocytopenia (<1lac/cumm)	86.8
Thrombocytopenia (<20,000/cumm)	18.8
Leukopenia	73.6
Hepatic dysfunction	6.47

Pulse pressure was <30mm/Hg in 45(18%) patients out of 250 patients and all these patients had platelet count less than 1 lac/cumm. Out of these 45(18%) patients, 29 patients had platelet count less than 40,000/cumm, 16 patients out of these 29 patients had platelet count less than 20,000/cumm. Tourniquet test was performed in 217 patients having platelet count less than 1 lac/cumm. Out of these 217 patients, 9 patients had positive tourniquet test, all these positive tourniquet test patients had platelet count less than 20,000/cumm with raised haematocrit and low pulse pressure. LFTs were altered in 14(6.45%) patients out of 217 patients having platelet count below 1 lac/cumm, 8 patients out of these 14 patients had hepatomegaly on ultrasonography. Out of 250 patients ascites was detected in 8(3.2%) cases, pleural effusion in 5(2%) cases and ascites with pleural effusion in 17(6.8%) cases, as shown in table no.3

**Table3:** Distribution of USG Findings in Dengue Patients

USG Findings	Percentage (%)
Hepatomegaly	3.6%
Ascites	3.2%
Pleural effusion	2.1%
Ascites + Pleural effusion	6.8%

**Discussion and Conclusion**

This study describes the clinical profile, laboratory features and outcome of DF/DHF/DSS. Dengue is an important emerging disease of the tropical and subtropical regions. The identification is by clinical features but they can present with varied manifestations [7-9]. There is a steady increase in the number of dengue patients over the past few years was noted. This is due to the rapid urbanization with unplanned construction activities and poor sanitation facilities contributing fertile breeding grounds for mosquitoes. Due to an increase in the alertness among medical fraternity following the initial epidemic and the availability of diagnostic tools in the hospital have contributed to the increased detection of cases [6]. The male to female ratio in this study was 3:1.2 compared to 1.2:1 in the study done by Mohan Kashinkunti *et al.* [4]. In this study most of the patients presented with dengue fever while dengue hemorrhagic fever and dengue shock syndrome were a minority group, similar result were observed from Mohan Kashinkunti *et al.* [4]. In this study 236 patients were classified as dengue fever, 13 as dengue haemorrhagic fever and 1 as dengue shock syndrome. In this study 13(5.2%) patients were observed as dengue haemorrhagic fever in contrast to the observation of 33.6% and 13.5% from Rachel Daniel *et al.* [3]. and sharma *et al.* [2] respectively, might have been due to misclassification with the large number of patients with a positive tourniquet test or rash included as dengue haemorrhagic fever. A high incidence of gastrointestinal symptoms like nausea, vomiting and abdominal pain were noted in the study. In this study 22.4% of patients had abdominal pain in contrast to the

observation of 62.4% and 38% from Rachel Daniel *et al.* [3] and sharma *et al.* [2].

Bleeding from various sites was seen in 13(5.2%) patients, this is in contrast to the findings of sharma *et al.* [2] which reported 69% of patients with bleeding manifestations, 21% were observed from Mohan kashinkunti [4] and less number of bleeding manifestations were observed in Rachel Daniel *et al.* [3]. In the present study major bleeding manifestation was haemoptysis in contrast to the GIT bleeding as the major manifestation observed in Rachel Daniel *et al.* [3].

Although thrombocytopenia was a common findings, there was poor co-relation between thrombocytopenia and bleeding tendencies an observation similar to the one made by sharma *et al.* [2].

In this study liver dysfunction was seen in 14(5.6%) patients as compared to liver dysfunction seen in 34(34%) patients in Mohan kashinkunti *et al.* [4].

Retro-orbital pain as cardinal feature of dengue fever was in 78(31.2%) patients in contrast to Mohan kashinkunti *et al.* [4] in which it was observed only in few cases.

In the present study death occurred in 4 patients whereas death was observed in 8 patients in Rachel Daniel *et al.* [3].

Dengue 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 in the area of epidemiology, manifestations, complications and outcome of the disease.

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