

## Original Research

### Clinical Profile of Patients with Dengue Infection at a Tertiary Care Center of North India

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#### ABSTRACT

**Background:** Dengue fever has gained importance over the last few years as there have been significant increase in its number. The present study aimed to record the clinical profile of dengue fever in adult population attending a tertiary care facility.

**Materials & Methods:** The present study was conducted on 120 cases of dengue fever who reported to the Emergency and department of Internal Medicine, Mayo Institute of Medical Sciences, Barabanki, Uttar Pradesh. The confirmations of dengue were made through estimation of NS1, IgG and IgM. Patients were classified based on the WHO criteria as follows: Dengue Fever (DF); Dengue Fever with unusual Bleed (DFB); Dengue Hemorrhagic Fever (DHF) and Dengue Shock Syndrome (DSS).

**Results:** Out of 120 patients, males were 72 (60.0%) and females were 48 (40.0%). Patients were classified as - dengue fever (n = 88), dengue fever with unusual bleed (n = 16), dengue hemorrhagic fever (n = 9) and dengue shock syndrome (n = 7). Common clinical symptoms were fever in 112, myalgia in 65, arthralgia in 43, abdominal pain in 38, vomiting in 41, anorexia in 72, altered taste in 15, skin rashes in 27 and decreased urine output in 62. Common signs in descending order of frequency were jaundice seen in 67, petechiae in 52, hepatomegaly in 52, ascites in 47, shock in 35 and bradycardia in 19 patients. Common radiological findings were left sided effusion in 15 cases, right sided effusion in 12 and both left and right sided effusion in 20 cases.

**Conclusion:** We found that dengue infection is one of the common cause of acute febrile illness during the post rain months in India. Common symptoms were fever, myalgia, arthralgia, abdominal pain, vomiting, anorexia, altered taste, skin rashes and decreased urine output.

**Key words:** dengue infection, myalgia, arthralgia.

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#### INTRODUCTION

Dengue fever has gained importance over last few years as there have been significant increase in its number all over the world.<sup>1</sup> The World Health Organization (WHO) found that there have been 40% people living in dengue virus infected area. This has emerged as a big threat to population globally. Dengue is an Arbovirus disease caused by mosquito-borne viral pathogen affecting humans.<sup>2</sup> There are approximately 96 million symptomatic episodes and 20,000 deaths occur every

year from this infection. Etiological agents for dengue include all four dengue serotypes, which belong to the genus *Flavivirus* of the family *Flaviviridae*.<sup>3</sup>

The clinical profile of patients varies from asymptomatic infection to severe infection. The symptoms of dengue fever are fever, body ache and maculopapular rash. Infants and children are more prone to this disease but older children experienced more severe form.<sup>4</sup>

There are certain host factors such as age, presence of comorbidities, phenotype, immunogenetic profile and sequential infection that play an important role in disease process. The strain, serotype and genotype of etiological agent also determine the outcome of disease. Complications of dengue fever are dengue hemorrhagic fever and dengue shock syndrome (DSS).<sup>5</sup> Dengue hemorrhagic fever is characterized by increased vascular permeability leading to hemoconcentration caused by infection with dengue virus. DSS has emerged as serious health threats. The morbidity and mortality of the disease is quite high. Other severe complications, such as severe liver, cardiac or neurological involvement, may also occur but are less frequent.<sup>6</sup>

There is need to generate awareness among people as there is no permanent treatment of the disease. There is no vaccine available for the virus. Hence precautions have to be taken to overcome this disease.<sup>7</sup> The present study aimed to record cases of dengue fever in adult population.

**MATERIAL & METHODS**

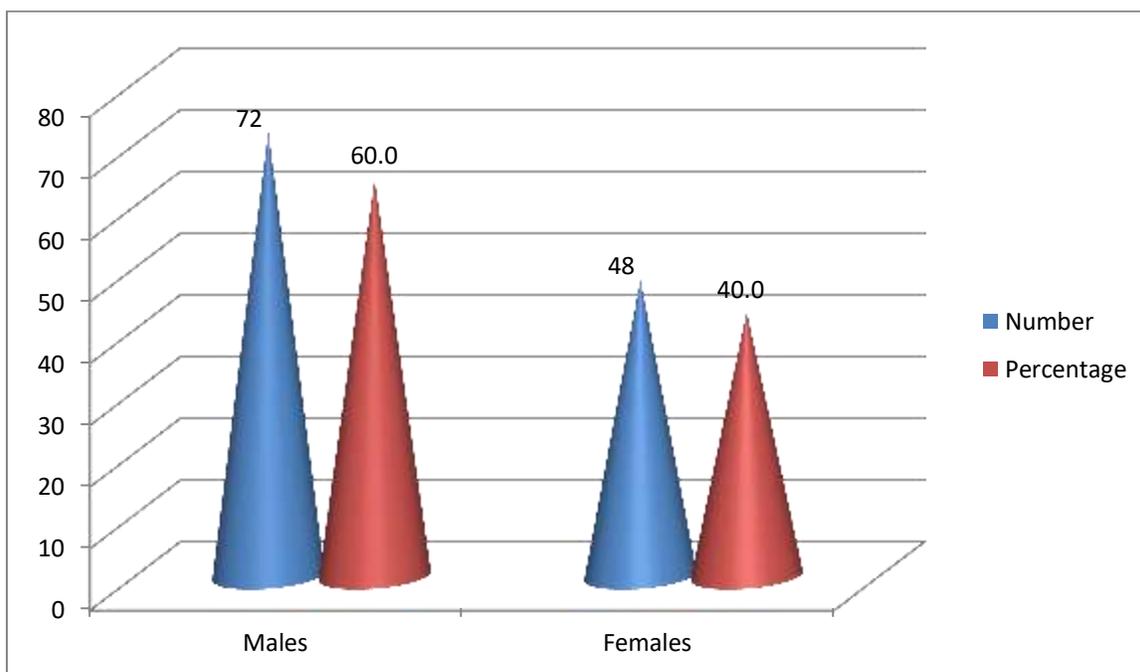
The present study was conducted on 120 cases of dengue fever who reported to the department of Internal Medicine, Mayo Institute of Medical Sciences,

Barabanki, Uttar Pradesh during the post rain months of August 2018 to October 2018. It comprised of 72 males and 48 females of age ranged 25-62 years. All patients were informed about the study. They were assured about their individual confidentiality and written consent was obtained. Ethical approval was obtained from the institute ethical committee prior to the study.

A case history and performa was made and patient data such as name, age, gender etc. was recorded. The confirmations of dengue were made through estimation of NS1, IgG and IgM. 5 ml of venous blood samples were collected aseptically from all subjects. Other routine laboratory tests such as complete blood count, platelet count, hemoglobin, hematocrit, liver function tests, renal function tests and urine routine was done in all patients. Patients were also subjected to chest x-ray and ultrasonography (USG) of abdomen. Patients were classified based on the WHO criteria as follows: Dengue Fever (DF); Dengue Fever with unusual Bleed (DFB); Dengue Hemorrhagic Fever (DHF) and Dengue Shock Syndrome (DSS). Results thus obtained were analysed regarding the clinical profile of dengue fever with respect to the frequency of the encountered signs and symptoms.

**RESULTS**

**Graph I: Distribution of patients**



Graph I shows that out of total 120 patients, 72 (60.0%) were male and 48 (40.0%) were female.

**Table II: Classification of patients**

Classification	Number
Dengue Fever	88
Dengue Fever with unusual Bleed	16
Dengue Hemorrhagic Fever	9
Dengue Shock Syndrome	7

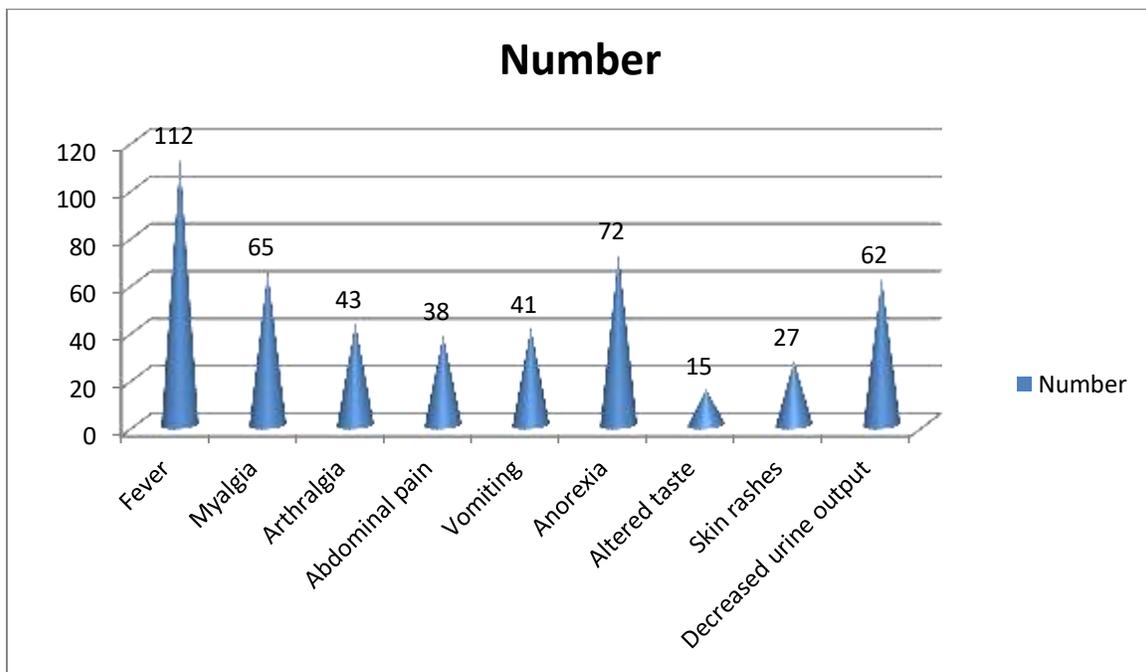
Table II shows that patients were classified as - dengue fever (88), dengue fever with unusual bleed (16), dengue hemorrhagic fever (9) and dengue shock syndrome (7).

**Table III: Clinical profile of patients**

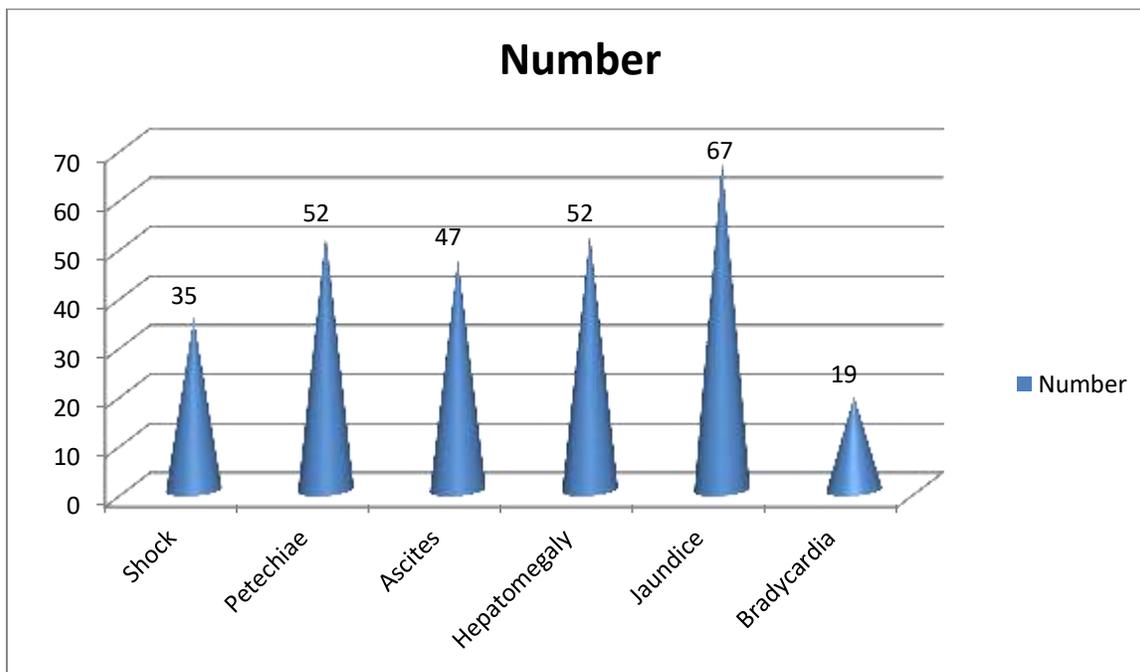
Clinical symptoms	Number
Fever	112
Myalgia	65
Arthralgia	43
Abdominal pain	38
Vomiting	41
Anorexia	72
Altered taste	15
Skin rashes	27
Decreased urine output	62

Table III, graph II shows that common clinical symptoms were fever in 112, myalgia in 65, arthralgia in 43, abdominal pain in 38, vomiting in 41, anorexia in 72, altered taste in 15, skin rashes in 27 and decreased urine output in 62.

**Graph II: Symptoms of patients**



**Graph III: Signs of patients**



Graph III shows that common signs were shock seen in 35, petechiae in 52, ascites in 47, hepatomegaly in 52, jaundice in 67 and bradycardia in 19 patients.

**Table IV: Radiological findings in patients**

Radiological findings	Number
Pleural effusion	
Right sided	12
Left sided	15
Both	20

Table IV shows that common radiological findings were left sided effusion in 15 cases, right sided effusion in 12 and both left and right sided effusion in 20 cases.

**DISCUSSION**

WHO (2009) issued the revised dengue classification such as dengue without warning signs, dengue with warning signs like persistent vomiting, abdominal pain, fluid accumulation, mucosal bleeding, lethargy, liver enlargement, restlessness, increasing hematocrit with decreasing platelets and severe dengue such as severe plasma leakage, severe bleeding or organ failure.<sup>8</sup> Nowadays, dengue is considered as one of the important arthropod borne viral illness in human in terms of disease burden including its morbidity and mortality. It is estimated that approximately 50 to 100 million new dengue infections occur globally every year. Among these, there are 200,000 to 500,000 cases of potential life-threatening dengue hemorrhagic fever (DHF).<sup>9</sup> The present study aimed to record the clinical profile of cases of dengue fever in adult population.

We found that out of 120 patients, males were 72 (60.0%) and females were 48 (40.0%). Patients were classified as - dengue fever (n = 88), dengue fever with unusual bleed (n = 16), dengue hemorrhagic fever (n = 9) and dengue shock syndrome (n = 7). Pawar et al<sup>10</sup> conducted a study on 56 patients of dengue fever and clinical presentations, laboratory profile, hematological complications and outcome of dengue fever was recorded. It was found that the maximum number of cases, 22 (39.2%), belonged to the age group between 20 to 40 years with mean age of 31.2 ± 4.5 yrs. There were 58.9% (33) males and 41.1% (23) females. Dengue hemorrhagic fever was seen in 20 (35.7%) and cases of severe dengue in 8 (14.2%). Two patients developed Disseminated Intravascular Coagulation (DIC) and expired.

We observed that common clinical symptoms were fever in 112, myalgia in 65, arthralgia in 43, abdominal

pain in 38, vomiting in 41, anorexia in 72, altered taste in 15, skin rashes in 27 and decreased urine output in 62. Some of the common signs in descending order of frequency were jaundice seen in 67, petechiae in 52, hepatomegaly in 52, ascites in 47, shock in 35 and bradycardia in 19 patients. We observed that common radiological findings were left sided effusion in 15 cases, right sided effusion in 12 and both left and right sided effusion in 20 cases.

Dias et al<sup>11</sup> in their study on 1,229 cases of severe dengue fever found that 812 patients were under the age of 15 (66%). Among the risk factors studied, age below 15 years (OR = 3.10, 95% CI = 2.69-3.57, p-value = 0.001) was associated with severe form of dengue. In children under the age of 15 years, prevalence of severe form of the disease was found to be more.

It is well established that four viral serotypes can cause fatal disease. Secondary infections are much more likely to be associated with severe clinical manifestations than primary infections. It is found that dengue non-structural protein (NS1) is a glycoprotein expressed by dengue-infected cells. Antigen-capture assay is widely used to detect NS1 in plasma or serum and presents an opportunity for it to be used for early and rapid diagnosis of dengue. It has also been proposed as a prognostic marker of severe disease.<sup>12</sup> The limitation of this study is a small sample size. Laboratory findings were not discussed in the study.

## CONCLUSION

We found that dengue infection is one of the common cause of acute febrile illness during post rain months in India. Common symptoms were fever, myalgia, arthralgia, abdominal pain, vomiting, anorexia, altered taste, skin rashes and decreased urine output.

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