



ORIGINAL RESEARCH PAPER

General Medicine

CLINICAL AND LABORATORY PROFILE OF DENGUE FEVER PATIENTS ADMITTED TO TERTIARY CARE HOSPITAL

KEY WORDS: Dengue fever, Clinical profile, laboratory profile

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ABSTRACT

Background: In India Dengue is one of the important causes of mortality and morbidity. Dengue is a mosquito-borne viral disease that has rapidly spread in all regions. In recent decades, dengue cases have drastically increased all across the world. This study aims to examine the clinical and laboratory characteristics of Dengue patients in a tertiary care teaching hospital. **Material and methods:** A total of 80 patients with dengue fever who were NS1 antigen or IgM dengue positive, were included in the study. All such patients who were admitted to the hospital underwent detailed clinical examinations and laboratory investigations performed. **Results:** In this study total number of patients included was 80, of whom 48 (60%) were male and 32 (40%) were female. The maximum number of patients belong to the age group 21-40 years, 52 (65%). Fever was the most common presenting symptom in 80(100%) patients, Headache (90%), abdominal pain (72.5%) and myalgia (45%) were the next three most common symptoms in the dengue patients. **Conclusion:** Dengue is an important cause of mortality and morbidity in our country. In view of the growing burden of dengue on the public health-care system one should have a high index of suspicion. Early diagnosis and prompt intervention may help in reducing mortality and morbidity.

INTRODUCTION:

Dengue is one of the most widespread arthropod-borne viral diseases in humans, infecting over 390 million people annually. Dengue has recently become a major public health problem in India causing significant morbidity, mortality and economic loss. There has been a recent resurgence of Dengue in India with a wide variety of presentation¹. This sudden emergence is due to unplanned urbanization and migration of the population to urban areas. Dengue fever is caused by Infection with one of the four serotypes of Dengue virus (DENV) which is an arthropod-borne single-stranded RNA virus of the genus Flavivirus.² It is made up of the DENV1, DENV2, DENV3, and DENV4 serotypes, which are all closely related but have different antigens. A person can eventually become infected by all four dengue serotypes, but only one dengue serotype offers permanent homotypic immunity to that serotype and a very brief period of partial heterotypic immunity to other serotypes.³ In India, all four serotypes have been isolated, and DENV1 and DENV2 serotypes are common.⁴

Dengue virus is transmitted by female mosquitoes mainly of the species *Aedes aegypti*.¹ The resurgence of dengue has been observed in India and varied clinical presentations are being reported in the outbreaks reported from different geographical locations. For a diagnosis and effective patient management, the precise clinical and laboratory profile is essential in dengue fever. This study is an effort to clarify the clinical and laboratory profile of dengue fever cases that have been serologically verified in our hospital.

MATERIAL AND METHODS:

From September 2021 to December 2021, the current study was conducted at the Government general hospital, Srikakulam in the department of medicine. A total of 80 dengue patients with NS1 antigen or IgM positivity who were admitted to the medical ward were included in the study. Each patient has undergone a thorough clinical examination and detailed history taking.

Laboratory investigations done were haemoglobin, total, and differential leukocyte counts, platelet count, hematocrit, liver function tests, blood urea, serum creatinine, chest radiograph, and an ultrasound scan of the abdomen. We monitored blood counts and hematocrit periodically as and when required till resolution.

RESULTS:

In this study total number of patients included was 80, of whom 48 (60%) were male and 32 (40%) were female. In this study, the maximum number of patients belonging to the age group 21-40 years, was 52 (65%) followed by 12-20 years, 12 (15%) and >40 years 16 (20%).

Fever was the most common clinical presentation, present in all the patients. Headache (90%) and abdominal pain (72.5%) were the next common clinical presentation. Myalgia 36 (45%), retroorbital pain seen in 24 (30%) Nausea and vomiting were present in 30 (37.5%) patients. About 22 (27.5%) patients had pruritus, and diarrhoea was seen in 6 (7.5%) cases. Gastrointestinal bleeding in 8 (10%) Insomnia in 12 (15%) Unconsciousness in 3 (3.75%) Seizures seen in 1 (1.24%) cases. (Table -1)

Table 1: Clinical manifestations in dengue fever cases.

Clinical Features	No Of Patients (%)
Fever	80 (100%)
Headache	72 (90%)
Abdominal Pain	58 (72.5%)
Myalgia	36 (45%)
Retro-Orbital Pain	24 (30%)
Nausea/Vomiting	30 (37.5%)
Arthralgia	12 (15%)
Diarrhoea	6 (7.5%)
Pruritus	22 (27.5%)
Gastrointestinal bleed	8 (10%)
Insomnia	12 (15%)
Unconsciousness	3 (3.75%)
Seizures	1 (1.25%)

Edematous gall bladder (56.25%), hepatomegaly (40%), ascites (31.25%), pleural effusion (15%), and splenomegaly (10%) were among the ultrasound findings in these dengue patients. Out of the 80 patients, 46 patients had NS1 antigen test results that were positive, and 34 patients had IgM test results that were positive.

Among 80 dengue cases, haematological parameters raised haematocrit (>45%) was found in 32 (40%) and leukopenia (<4000/ microliter) was found in 56 (70%) patients. Thrombocytopenia 65 (81.3%) was observed in most of the patients with varying severity, severe (<20000 platelets/μl)

was observed in 3 (3.8 %) patients while moderate (20000-50000 platelets/ μ l) in 12 (15%) patients and 50000-1.5 lakh platelets/ μ l 50 (62.5%) (Table-2). The minimum platelet count noted was 12000 platelets/ μ l. Among biochemical parameters, raised SGOT (>45 IU/L), raised SGPT (>45 IU/L) were observed in 24 (30%) and 18 (22.5 %) respectively, 6 (7.5%) patients had raised serum creatinine (>1.5mg/dl) , 2 patients (2.5%) had abnormal PT and INR levels. (Table-2).

Table 2: Ultrasound findings and Laboratory findings of Dengue fever

Ultrasound findings	No Of Patients (%)
Gall bladder wall oedema	45 (56.25%)
Hepatomegaly	32 (40%)
Ascites	25 (31.25%)
Splenomegaly	8 (10%)
Pleural effusion	12 (15%)
Laboratory Parameters	No Of Patients (%)
Haematocrit > 45%	32 (40%)
Leukopenia <4000/ microliter	56 (70%)
Platelet Count (Thrombocytopenia)	65 (81.3%)
<20000 platelets/ μ l	3 (3.8%)
20000-50000 platelets/ μ l	12 (15%)
50000-1 lakh platelets/ μ l	30 (37.5%)
1-1.5Lakh platelets/ μ l	20 (25%)
SGOT(>45IU/L)	24 (30%)
SGPT(>45 IU/L)	18 (22.5%)
Serum Creatinine >1.5mg/dl	6 (7.5%)
Abnormal PT & INR levels	2 (2.5%)

DISCUSSION:

In India, dengue fever is increasingly becoming a serious health concern. Frequent dengue virus outbreaks have been killing more people. In our study, male to female ratio was 1.5:1, a similar pattern of male preponderance was found in previous studies conducted by: Md. Yousuf Khan⁵ Seema Avasthi et al⁶; Karolie et al⁷ Fever was the most common presenting symptom in 80 (100%) patients, which is similar to studies from India and Southeast Asia^{8,9}. Headache (90%), abdominal pain (72.5%) and myalgia (45%) were the next three most common features/symptoms in the patients.⁷ In our study, the most common ultrasound finding was Gall bladder oedema 45(56.25%) similar to previous studies.¹⁴ Raised haematocrit(>45%) was+ found in 40% compared to previous studies.^{11,12} Leukopenia (<4000/ microliter) was noticed in 70 % comparable to studies done by Munde et al¹⁰ and Ritu Karolis et al⁷ noticed in 50% and 89% respectively. Platelet Count <50000 platelets/ μ l noticed in 18.8 % lower than studies done by Munde et al¹⁰ found in 75% and Karolie et al⁷ found in 89%. Raised SGOT(>45 IU/L) was found at 30% comparably lower than the previous study done by Vanamali D R et al¹³, and Ritu Karolie et al⁷ found in 88 % and 83.9% respectively. Raised SGPT(>45IU/L) was found in 22.5% similar to the previous studies by Vanamali D R et al¹³ (23%). In our study, there were no fatalities, indicating that timely early detection and treatment, led to dramatic changes in prognosis.

CONCLUSION :

The dengue fever was predominantly affecting the male younger age group people mostly a febrile illness with headache abdominal pain and myalgia. It presents with varied clinical manifestations. In view of the increasing burden of dengue on the public healthcare system, one should have a high index of suspicion. Early diagnosis and prompt intervention may help in reducing mortality and morbidity.

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