

ORIGINAL ARTICLE

Assessment of cases of dengue fever by clinical and laboratory findings

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ABSTRACT:

Background: Dengue is the most common viral disease in humans. Every year about 50 - 100 million individuals are infected. Dengue is reported in both urban and rural area. The present study was conducted to assess the cases of dengue fever by clinical and laboratories findings. **Materials & Methods:** This study was conducted in the department of General medicine in year 2015. It included 1025 patients who diagnosed with dengue fever. All were informed regarding the study and consent was taken. Ethical clearance was obtained from institutional committee. Detailed history and careful clinical examination was performed on each patient. Laboratory investigations included were hemoglobin (Hb), DLC, TLC, platelet count, hematocrit, liver function tests (LFT), blood urea and serum creatinine. All were also subjected to chest radiograph and ultrasound scan of abdomen. **Results:** Out of 1025 patients, males were 625 and females were 600. The difference was non- significant (P- 1). Age group 10- 20 years had 105 males and 100 females, age group 20-30 years had 180 males and 170 females, age group 30-40 years had 210 males and 190 females and above 40 years consisted of 130 males and 140 females. The difference was non- significant (P- 1). Common symptoms in patients were fever (1025), headache (990), myalgia (923), retro- orbital pain (152). Other symptoms were nausea/ vomiting (25), diarrhea (12), skin rashes (359) and bradycardia (18), bleeding (24), ascites (72), hepatomegaly (57) and splenomegaly (62). Laboratories findings were thrombocytopenia (< 50,000/ cumm) (680), leucopenia (< 4,000/ cu mm) (218), raised AST and ALT (> 45 IU/L) (854), and raised hematocrit (> 45%) (248). **Conclusion:** Dengue fever presents clinical and laboratories findings which helps in early detection. Fever is the main symptom and vomiting, hepatomegaly and splenomegaly etc. are associated symptoms. AST and ALT are important reliable laboratories findings which help in early diagnosis of cases as these parameters are highly raised in patients.

Key words: Dengue, fever, nausea/ vomiting.

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Introduction

Dengue is the most common viral disease in humans. Every year about 50 - 100 million individuals are infected. Dengue is reported in both urban and rural area. Dengue fever has become a major recurring health problem in South-East Asia. Dengue is caused by infection with one of the four serotypes of dengue virus, which is a Flavivirus. Infection with one dengue serotype confers lifelong homotypic immunity to that serotype and a very brief period of partial heterotypic immunity to other serotypes, but a person can eventually be infected by all 4 serotypes.¹ The spread of Dengue is by mosquitoes "Aedes aegypti". Dengue infection is initially asymptomatic, may lead to nonspecific febrile illness, or may produce the symptom complex of classic dengue fever (DF). It is characterized by

rapid onset of high fever, headache, retro-orbital pain, diffuse muscle and bone pain, weakness, vomiting, sore throat, altered taste sensation, bleeding, low levels of blood platelets and blood plasma leakage and a centrifugal maculopapular rash.² It can lead to Dengue hemorrhagic fever and Dengue shock syndrome which is seen in person who have previously been infected by one dengue serotype develop bleeding and endothelial leak upon infection with another dengue serotype. This leads to an inadequate or late treatment of a disabling and potentially lethal medical condition.³

The incubation period ranges from 3 to 14 days, but most often it is 4 to 7 days. Children often experience symptoms similar to those of the common cold and gastroenteritis. Some petechiae (small red spots that do not disappear when

the skin is pressed, which are caused by broken capillaries) can appear at this point, as may some mild bleeding from the mucous membranes of the mouth and nose.³

The disease may proceed to a critical phase as fever resolves. During this period, there is leakage of plasma from the blood vessels, typically lasting one to two days. This may result in fluid accumulation in the chest and abdominal cavity as well as depletion of fluid from the circulation and decreased blood supply to vital organs. There may also be organ dysfunction and severe bleeding, typically from the gastrointestinal tract. Common laboratories findings are thrombocytopenia, leukopenia, raised AST, ALT and hematocrit.⁴

The present study was conducted to assess the cases of dengue fever by clinical and laboratories findings.

Material & Method

This study was conducted in the department of General medicine in year 2015. It included 1025 patients who diagnosed with dengue fever. All were informed regarding the study and consent was taken. Ethical clearance was obtained from institutional committee.

Detailed history and careful clinical examination was performed on each patient. Laboratory investigations included were hemoglobin (Hb), DLC, TLC, platelet count, hematocrit, liver function tests (LFT), blood urea and serum

creatinine. All were also subjected to chest radiograph and ultrasound scan of abdomen.

Results were subjected to statistical analysis using chi-square test. P value less than 0.05 was considered significant.

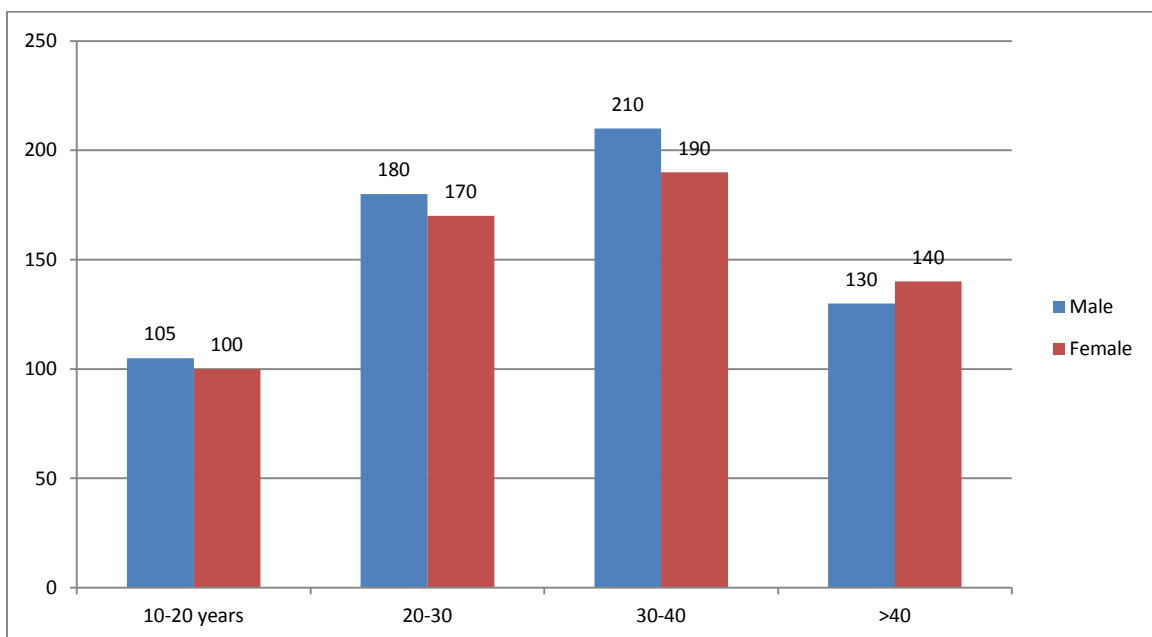
Results

Table I shows that out of 1025 patients, males were 625 and females were 600. The difference was non- significant (P- 1). Graph I shows that age group 10- 20 years had 105 males and 100 females, age group 20-30 years had 180 males and 170 females, age group 30-40 years had 210 males and 190 females and above 40 years consisted of 130 males and 140 females. The difference was non- significant (P- 1). Graph II a shows that common symptoms in patients were fever (1025), headache (990), myalgia (923), retro-orbital pain (152). Graph II b shows that other symptoms were nausea/ vomiting (25), diarrhea (12), skin rashes (359) and bradycardia (18). Graph II c. shows that common symptoms were bleeding (24), ascites (72), hepatomegaly (57) and splenomegaly (62). Graph III shows that laboratories findings were thrombocytopenia (< 50,000/ cumm) (680), leucopenia (< 4,000/ cu mm) (218), raised AST and ALT (> 45 IU/L) (854), and raised hematocrit (> 45%) (248).

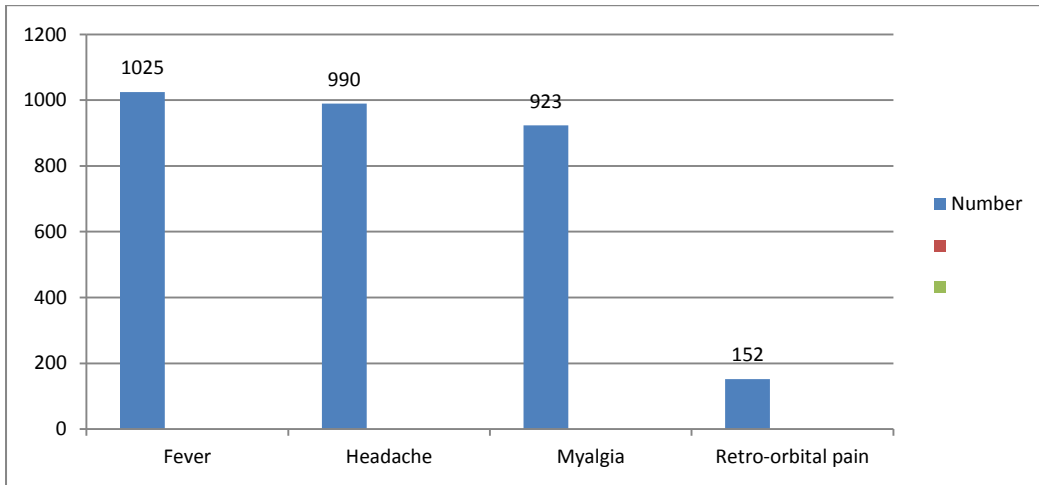
Table I Distribution of patients

Male	Female	P value
625	600	1

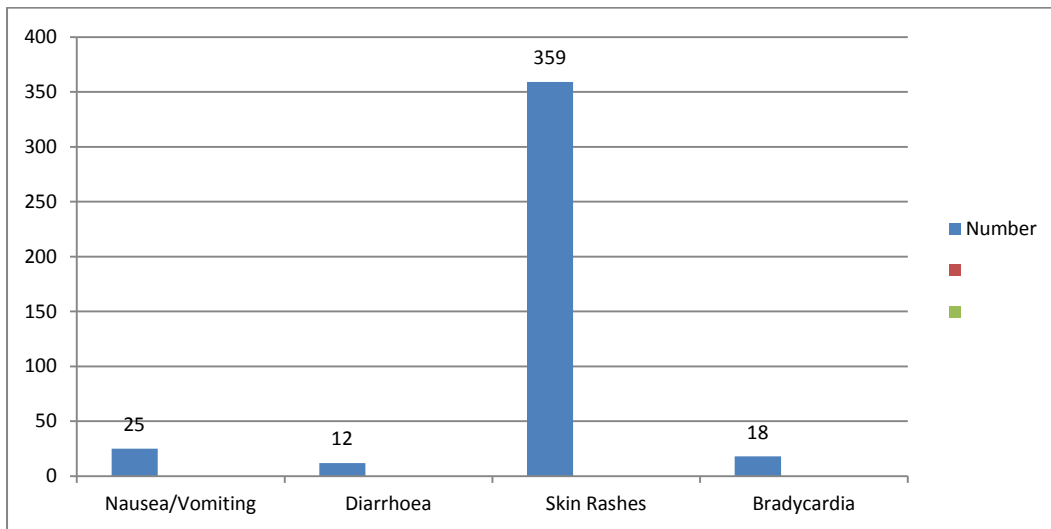
Graph I Age and gender wise distribution of patients



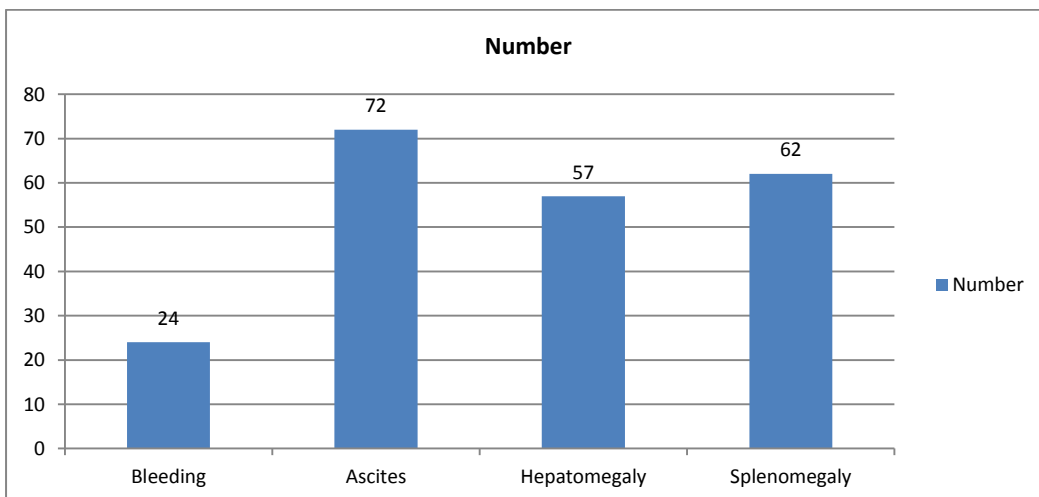
Graph II a. Common symptoms in patients



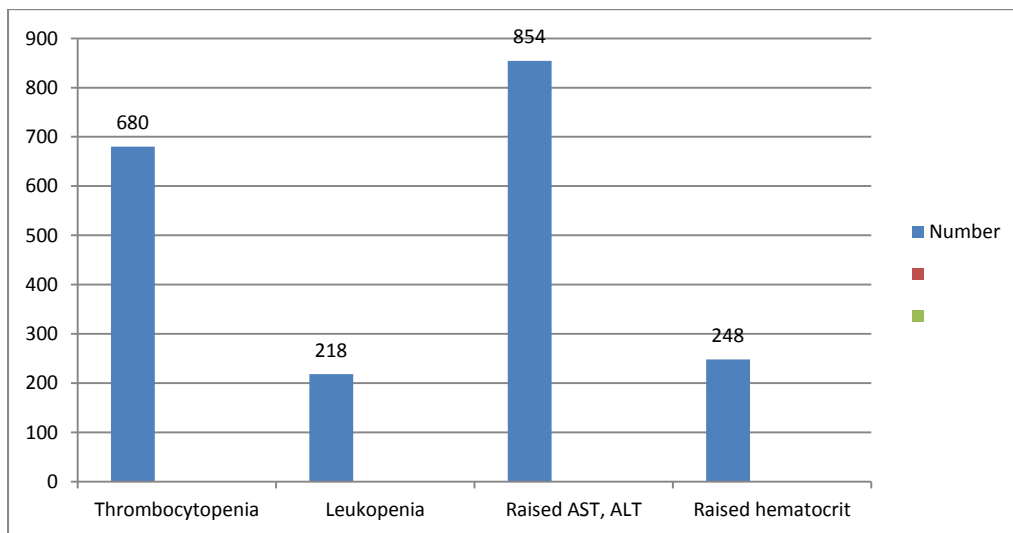
Graph II b. Symptoms in patients



Graph II c. Common symptoms



Graph III Laboratory findings



Discussion

Dengue is a disease of humans which affects up to 100 million people across the world. There are four serotypes of the virus and spectrum of disease ranges from asymptomatic infection to acute Dengue hemorrhagic fever.

Acute Dengue hemorrhage fever begins as a febrile illness categorized by high grade fever, bone pains, headache and other non-specific symptom difficult to distinguish from any other viral illness. More severe cases develop circulatory collapse due to increased vascular permeability, multiple organ failure.⁵ The present study was conducted to assess the cases of dengue fever by clinical and laboratories findings.

In this study, out of 1025 patients, males were 625 and females were 600. We found that, maximum patients were seen in age group 20-30 years followed by 20-30 years, >40 years and 10-20 years. This is in accordance to results of study by Nguyen T et al.⁶

We found that common symptoms in patients were fever, headache, myalgia and retro- orbital pain. This is in accordance to Mohan B et al.⁷ Fever is the most common finding and it was present in all patients. Other associated symptoms were nausea/ vomiting, diarrhea, skin rashes and bradycardia. A study done by Trung DT⁸ found that nausea/ vomiting and skin arshes were common symptoms. We found that splenomegaly was seen in 62 patients, hepatomegaly in 57patients and ascites in 72 patients. This is in accordance to Souja et al.⁹

We found that laboratories findings were thrombocytopenia which was seen in 680 patients, leucopenia in 218 patients, 854 patients showed raised AST and ALT (> 45 IU/L) and raised hematocrit (> 45%) was seen in 248 patients. Similar results were seen in study by Chhina RS et al.¹⁰

In febrile phase there is high fever, >104 °F and is associated with generalized pain and a headache; this usually lasts two to seven days. A rash occurs in 50–80% of

those with symptoms in the first or second day of symptoms as flushed skin, or later in the course of illness, as a measles-like rash. A rash described as "islands of white in a sea of red" has also been observed. Some petechiae can appear at this point, as may some mild bleeding from the mucous membranes of the mouth and nose.¹¹ The fever itself is classically biphasic or saddleback in nature, breaking and then returning for one or two days.

Conclusion

Dengue fever presents clinical and laboratories findings which helps in early detection. Fever is the main symptom and vomiting, hepatomegaly and splenomegaly etc. are associated symptoms. AST and ALT are important reliable laboratories findings which help in early diagnosis of cases as these parameters are highly raised in patients.

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