

**A STUDY OF CLINICAL PROFILE IN DENGUE CASES****DHANDAPANI E.*¹ AND SUDHA M²**

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ABSTRACT

Dengue, also known as “Breakbone fever”, is an infectious tropical disease caused by Flavi virus and is transmitted by Aedes mosquito. Approximately 2.5 billion people¹ live in dengue-risk regions with about 100 million new cases each year worldwide. The cumulative dengue diseases burden has attained an unprecedented proportion in recent times with sharp increase in the size of human population at risk. About half of the world’s population is at risk now. In our tertiary care center Rajiv Gandhi Government General Hospital, Chennai, we conducted a prospective study from October 2013 to December 2013, during which 75 patients with Dengue IgM positivity were taken into consideration. We monitored the total count, platelet count, hemoglobin, ultrasonographic imaging and hematocrit serially and the outcome of the patients were followed up till the discharge of the patients.

KEY WORDS: Thrombocytopenia, Flavivirus, Dengue shock syndrome, Dengue Hemorrhagic Fever

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INTRODUCTION

Dengue is a tropical infection, caused by a Flavi virus¹ and is transmitted by Aedes mosquito, a day biting mosquito. The characteristic symptoms of dengue are sudden-onset fever, headache, retro-orbital pain, muscle pain, joint pains, and a rash. The course of infection is divided into three phases: febrile, critical, and recovery. A probable diagnosis is based on the findings of fever plus two of the following: nausea and vomiting, rash, generalized pains, low white blood cell count, positive tourniquet test, or any warning signs in someone who lives in an endemic area. Treatment is mainly supportive management, there are no specific antiviral drugs for dengue, however maintaining proper fluid balance is important.

OBSERVATION AND RESULTS

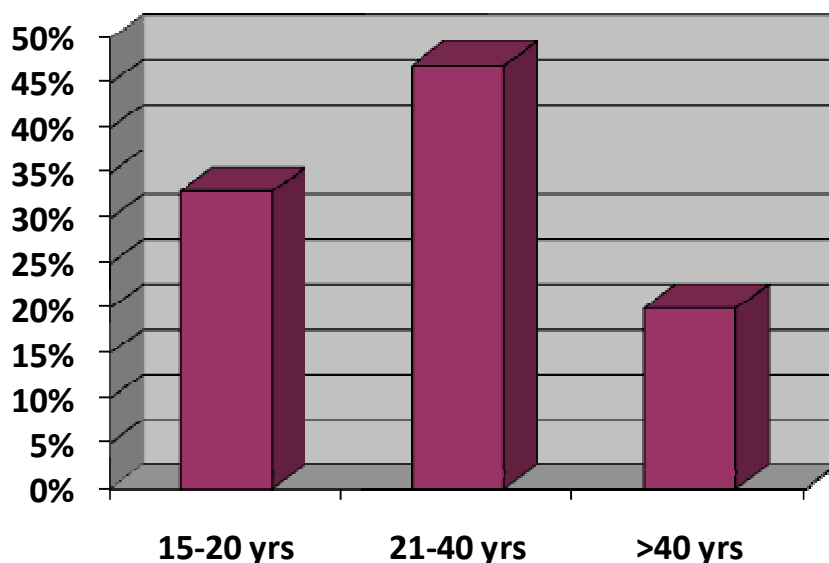
METHODOLOGY

Patients admitted with fever are selected for this case study and daily detailed clinical examination of bleeding manifestations² in the form of petechiae, blanching, erythema, tourniquet test were noted. Daily monitoring of hemoglobin, hematocrit, total count, platelets were done. Chest X ray was done to rule out effusion, ultrasound abdomen was done to rule out serositis and gall bladder edema. Other co-infections were ruled out by doing Widal, MSAT and a smear for malarial & filarial parasite. Only IgM dengue positive cases were included in this study.

Table 1
Age group distribution

Age group	Number	Percentage
15-20 years	25	33
21-40 years	35	47
>40 years	15	20

Chart 1
Age group distribution

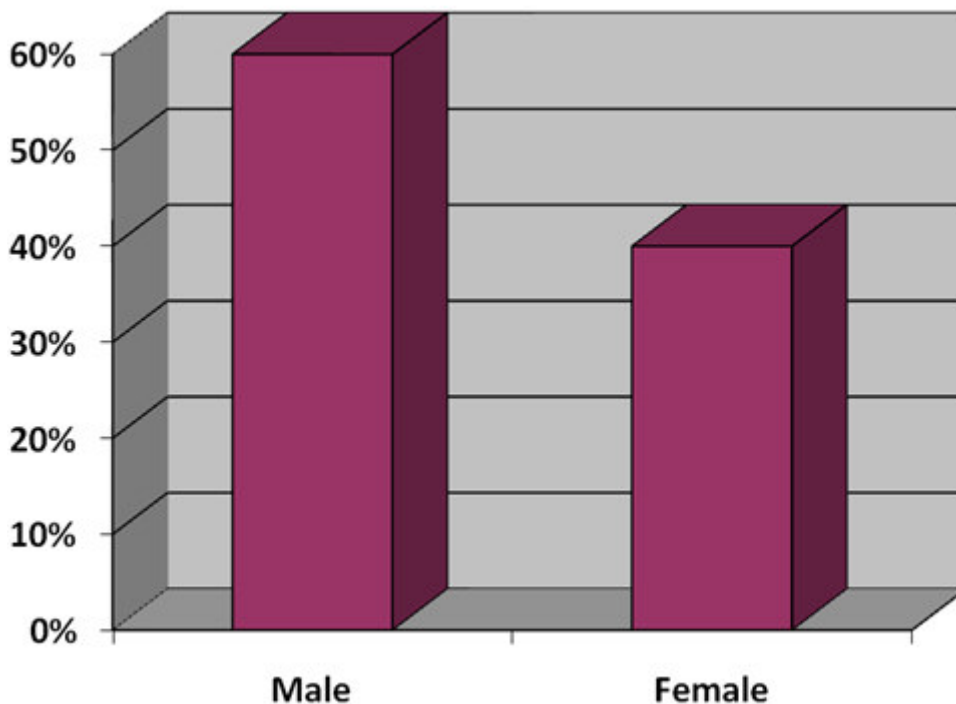


47% of the cases are in the age group between 21-40 years, 33% of the cases are in age group between 15-20 years and 20% of the cases are in the age group >40 years.

Table 2
SEX DISTRIBUTION

Sex	Number	Percentage
Males	45	60
Females	30	40

Chart 2
Sex Distribution

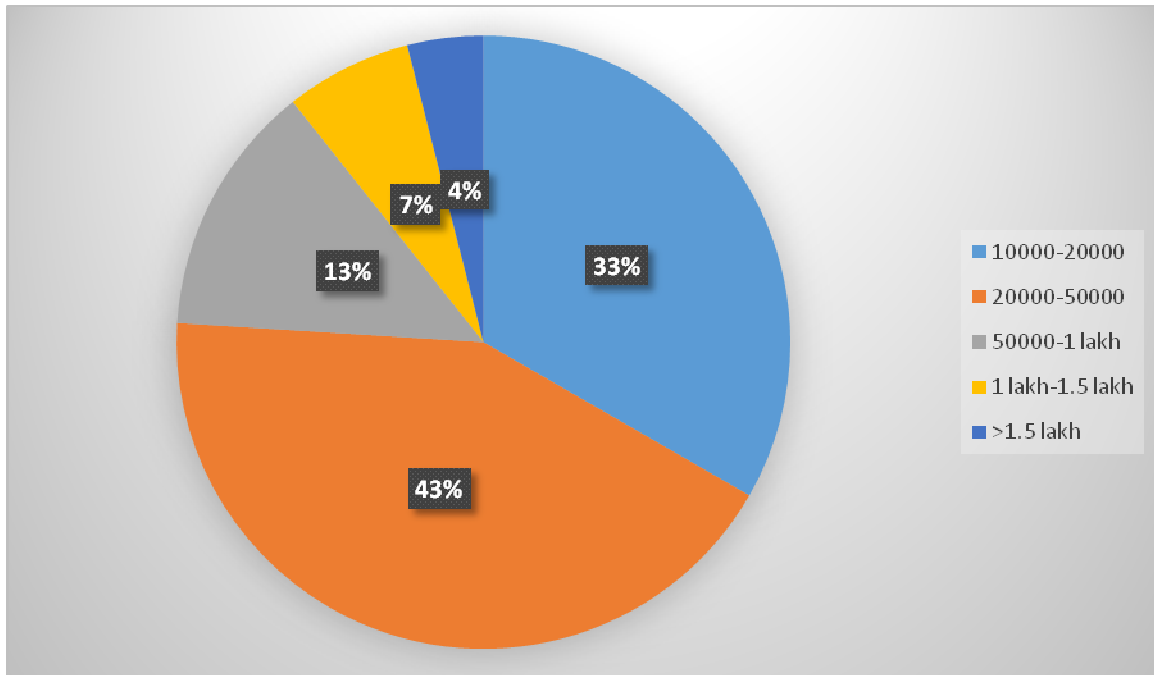


Among 75 patients, 45 patients (60%) are found to be male and 30 patients are found to be female.

Table 3
DENGUE & THROMBOCYTOPENIA

Platelet count	Number of patients	Percentage
10,000-20,000	25	33
20,000-50,000	32	43
50,000-1,00,000	10	13
1,00,000-1,50,000	5	7
>1,50,000	3	4

Chart 3
Dengue & Thrombocytopenia

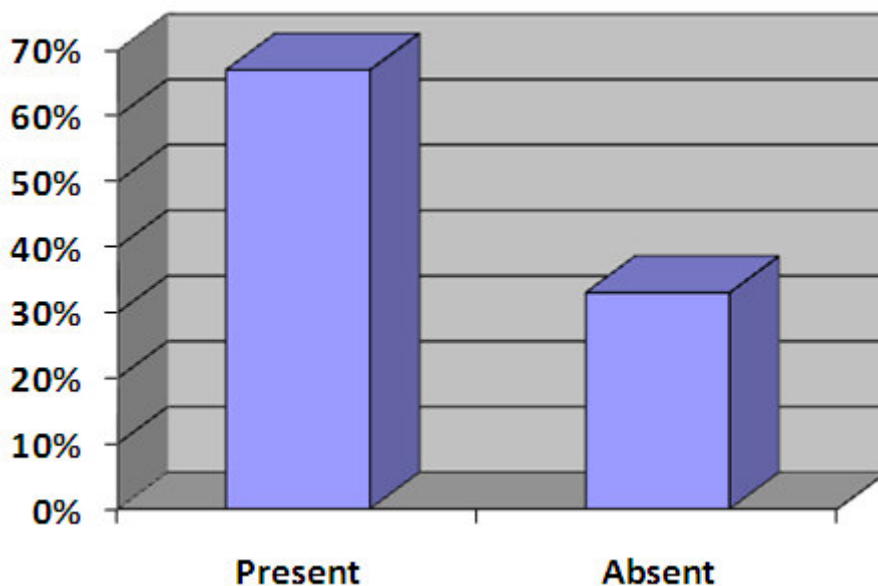


About 43% of the patients have platelet value between 20,000-50,000, 33% of the patients were found to be between 10000-20000, 13% of the patients were found to be between 50000-100000.

Table 4
Dengue & Bicytopenia (Leucopenia & thrombocytopenia)

Bicytopenia	Number	Percentage
Present	50	67
Absent	25	33

Chart 4
Dengue & Bicytopenia

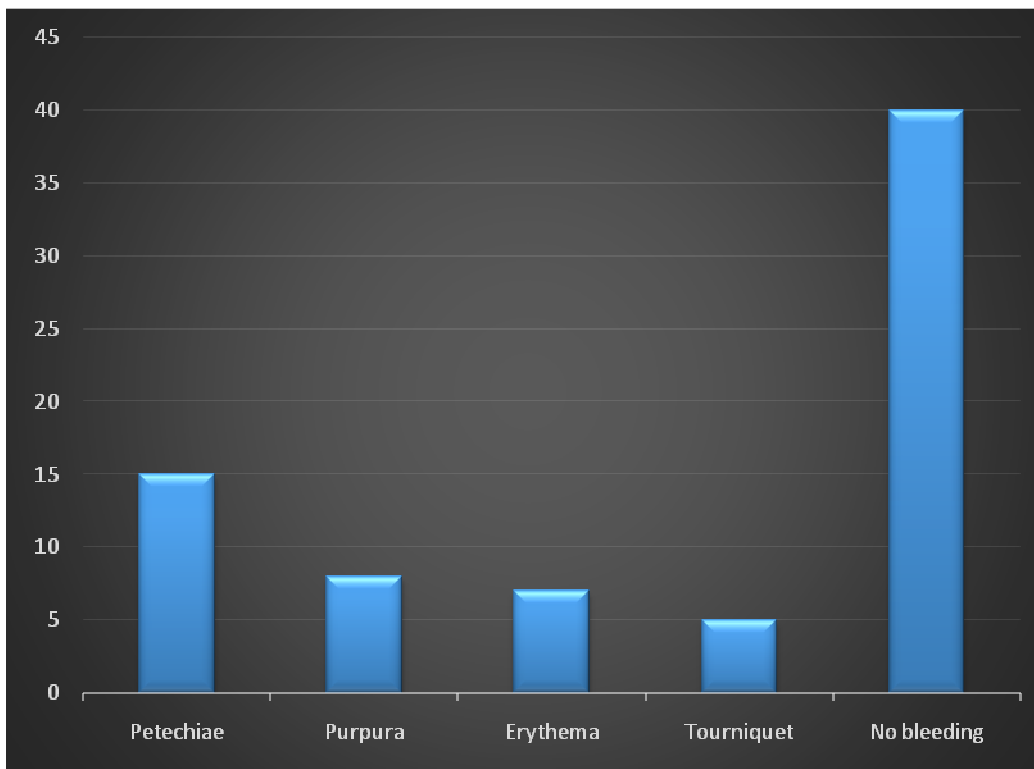


Among 75 patients, 50 patients (67%) were found to have bicytopenia at the time of admission.

Table 5
Dengue & Bleeding manifestations

Manifestation	Number	Percentage
Petechiae	15	20
Purpura	8	11
Blanching erythema	5	7
Positive Tourniquet test	7	9
No bleeding	40	53

Chart 5
Dengue & Bleeding manifestations

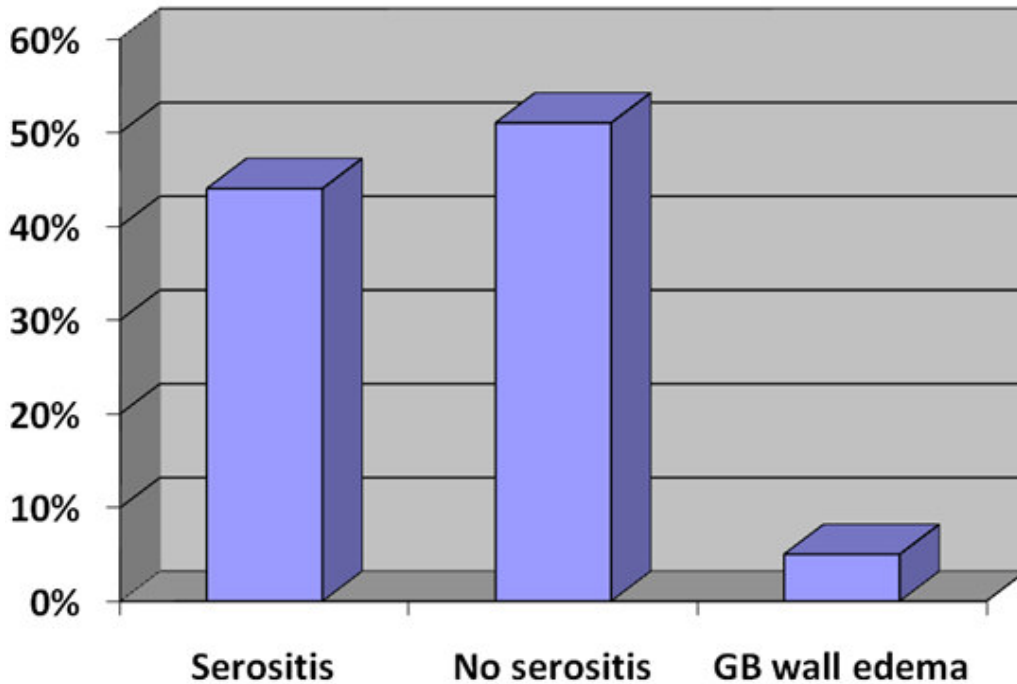


Among 75 patients, 40 patients (53%) have no bleeding manifestation and the remaining 35 patients (47%) have bleeding manifestation in the form of petechiae, purpura, blanching erythema and positive tourniquet test.

Table 6
Dengue & Ultrasound abdomen

USG Findings	Number	Percentage
Serositis - Present	33	44
Serositis - Absent (Normal)	38	51
Gall bladder wall edema	4	5

Chart 6
Dengue & Ultrasound abdomen

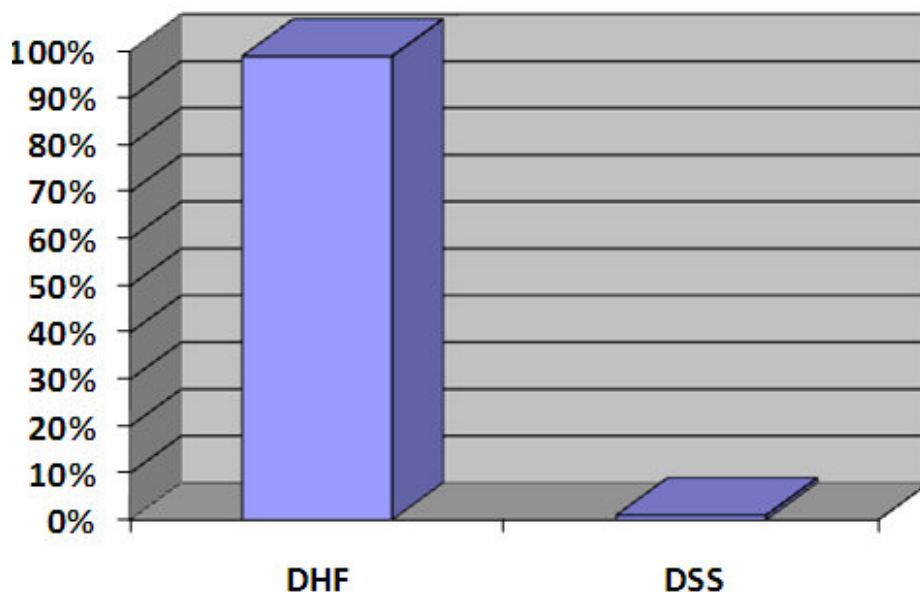


About 38 patients (51%) have normal USG abdomen study and the remaining 37 patients (49%) are having abnormal finding in the form of serositis or gall bladder wall edema.

Table 7
Dengue Manifestations

Manifestations	Number	Percentage
Dengue fever	74	99
Dengue shock syndrome	1	1

Chart 7
Dengue Manifestations



In 75 patients, only one patient (1%) presented with dengue shock syndrome that too in the age group of 16 years. Dengue shock syndrome is most commonly observed in children.

DISCUSSION

Dengue is a viral fever transmitted by the bite of *Aedes* mosquito. There are four serovars of dengue virus, infection with one type usually gives lifelong immunity to that type, but only short-term immunity to the others. Subsequent infection with a different type increases the risk of severe complications. Some 1.8 billion (more than 70%)³ of the population at risk for dengue worldwide live in member states of the WHO South-East Asia Region and Western Pacific Region, which bear nearly 75% of the current global disease burden due to dengue. The first detailed description of the

The clinical course is divided into three phases:

- Febrile phase (2-7 days)
- Critical phase (1-2 days)
- Recovery phase (2-3 days)

The febrile phase involves high fever, generalized pain and a headache, nausea and vomiting. A rash occurs in 50–80% of those with symptoms in the first or second day of symptoms. In critical phase there is significant fluid accumulation in the chest and abdominal cavity due to increased capillary permeability and leakage. This leads to depletion of fluid from the circulation and decreased blood supply to vital organs. Organ dysfunction and severe bleeding, typically from the gastrointestinal tract, may occur. Shock (dengue shock syndrome) and hemorrhage (dengue hemorrhagic fever) occurs during this phase. This phase occurs more commonly in children and young adults. Recovery phase occurs with resorption of the leaked fluid into the bloodstream. During this stage, a fluid overload state may occur; if it affects the

disease was written by Dr. Benjamin Rush, signer of the Declaration of Independence, who studied cases during a 1780 epidemic in Philadelphia.

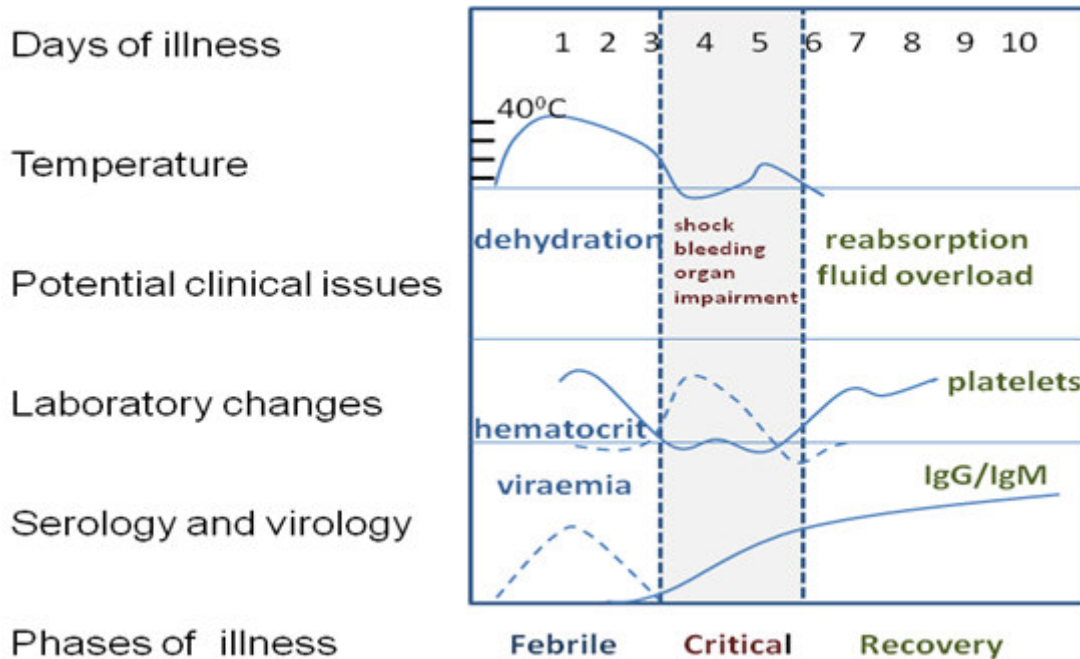
Clinical features

People infected with dengue virus are asymptomatic (80%) or only have mild symptoms such as an uncomplicated fever. Others have more severe illness (5%), and in a small proportion it is life-threatening. The incubation period is 4–7 days. The characteristic symptoms of dengue are fever, headache, retro-orbital pain, joint pain, muscle pain, rash.

brain, it may cause a reduced level of consciousness or seizures. A feeling of fatigue may last for weeks in adults.

Associated problems

Dengue can occasionally affect several other body systems, either in isolation or along with the classic dengue symptoms. A decreased level of consciousness occurs in 0.5–6% of severe cases, which is attributable either to inflammation of the brain by the virus or indirectly as a result of impairment of vital organs, for example, the liver. Other neurological disorders have been reported in the context of dengue, such as transverse myelitis and Guillain-Barré syndrome. Infection of the heart and acute liver failure are among the rarer complications.



CDC Definitions

Dengue fever

Dengue fever is most commonly an acute febrile illness defined by the presence of fever or two or more of the following, retro-orbital pain, rash, myalgia, arthralgia, headache, leukopenia or hemorrhagic manifestations.

Dengue hemorrhagic fever

It is characterized by all of the following:

- Fever lasting for 2 - 7 days
- Hemorrhagic manifestations
- Thrombocytopenia (< 1 lakh)
- Evidence of plasma leakage.

Dengue shock syndrome

Criteria for DHF + evidence of circulatory failure

Rapid and weak pulse and narrow pulse pressure

Age specific hypotension, cold and clammy skin and restlessness.

Fluid management in DHF & DSS

Fluid management⁵ is the cornerstone of management. It is to be stratified into the following categories:

1. For patients without warning signs who are not admitted.
2. For patients without warning signs or shock who are admitted.
3. For patients with warning signs but without shock who are admitted.
4. For patients with warning signs but with compensated shock.
5. For patients with hypotensive shock.

CONCLUSION

The following results were concluded from our study.

1. Majority of dengue infected patients (47%) were under age group 21-40 years.
2. Males (60%) were more commonly affected than females.
3. Thrombocytopenia (Platelet <1 lakh) was seen in 89% of dengue infected patients.
4. Bicytopenia (thrombocytopenia & leukopenia) was seen in 67% of dengue infected patients.

5. 47% of dengue infected patients had bleeding manifestations in the form of petechiae, purpura, blanching erythema and positive tourniquet test at the time of admission.
6. 49% of dengue infected patients had abnormal USG findings such as serositis (ascites) and Gall bladder wall edema.
7. Dengue shock syndrome was seen in 1% of dengue infected patients. It is more common in children than adults.

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