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ORIGINAL ARTICLE

Assessment of Cases of Dengue Fever in Study Population- A Clinical Study

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ABSTRACT:

Background: Dengue viruses are mosquito-borne flavi viruses that plagued people for centuries. Dengue fever (DF) and its more severe form i.e. dengue hemorrhagic fever (DHF), are caused by any one of the four serotypes of dengue virus belonging to the genus flavivirus transmitted by Aedes aegyptei. The present study was conducted to assess the cases of dengue in study population. **Materials & Methods:** This study was conducted in the department of general medicine in year 2015. It included 450 patients of both gender. After taking the history, clinical examination and laboratory investigation like complete hemogram, urea, creatinine, liver function test, chest, X-ray, ECG and ultra sound of abdomen was taken. Platelet counts were estimated. The diagnosis of pleural effusion was confirmed by X-chest. In ECG finding tachycardia was present in all the patients of shock and haemorrhage. All were subjected to serology NS1, IgM, IgG/IgM with rapid kit test. **Results:** Out of 450 patients, males were 220 and females were 230. The difference was non- significant (P-1). Age group 21-30 years consisted of 180 patients, age group 31-40 years had 135 patients, age group 41-50 years had 77 patients and >50 years had 58 patients. The difference was significant (P- 0.04). Common clinical manifestations in patients were fever (410), headache (250), myalgia (205), rash (157), bleeding (42), GIT manifestations (386) and shock (12). The difference was significant (P- 0.05). Platelets counts were <10000/cmm in 50 patients, <250000/cmm in 135 patients, <75000/cmm in 210 patients and 75000-150000/cmm in 55 patients. The difference was significant (P- 0.05). Serological test showed NS1 in 140 patients, IgM in 178 patients and IgG in 132 patients. Most of cases were seen in winters, September (125), October (210), November (70), December (35), January (5), February, may and july (1) each and September (2). The difference was significant (P- 0.05). **Conclusion:** Dengue is a viral fever caused by biting of mosquito. Proper care should be taken to avoid accumulation of water to prevent spread of mosquitoes. Bleeding, fever and decrease in platelets counts should be dealt seriously.

Key words: Aedes aegyptei, Dengue fever, flavi viruses.

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INTRODUCTION

Dengue viruses are mosquito-borne flavi viruses that plagued people for centuries. Dengue fever (DF) and its more severe form i.e. dengue hemorrhagic fever (DHF), are caused by any one of the four serotypes of dengue virus (DEN-1, DEN-2, DEN- 3, DEN-4) belonging to the genus flavivirus transmitted by Aedes aegyptei. Infection by one serotype generates life-long immunity against the same serotype, but gives transient/partial protection against the other serotypes.[1]

Sequential infection with another serotype can result in the more severe DHF. Immunology of Dengue Fever if characterized by an initial viremic phase which corresponds to the first 3 days of illness followed by a critical immune phase spanning from 3rd to 6th day of illness. The phase of dengue beyond 6th day of illness is called recovery phase. A sizable number of patients take longer to recover.[2]

During the febrile stage, people may also have: pain all over their bodies, headache a rash (this happens in 50% to 80% of people who get sick from dengue), petechiae (small red spots on the skin). These are caused by capillaries breaking. This makes the blood leak out and shows up under the skin. Small amounts of bleeding from the mucous membranes in the mouth and nose

The febrile stage usually lasts 2 to 7 days. This stage ends when a person's high fever is gone. It can cause altered mental status. This happens in 0.5% to 6% of people with very bad dengue fever. It can happen when the dengue virus causes an infection in the brain.[3] It can also happen when important organs, like the liver, are not working correctly

because of dengue. Neurological disorders involving brain and the nerves, like Guillain–Barré syndrome [5] and Post-dengue acute disseminated encephalomyelitis. Rarely, it can result into infection of the heart, or sudden liver failure.[4]
Dengue infection represents a considerable disease burden in many tropical and sub-tropical countries, particularly in children and young adults, living in urban and semi-urban areas. Globally about 50 million infections occur which is projected to increase. In endemic areas, dengue infection is a leading cause of hospitalisation and deaths among children.[5] The present study was conducted to assess the cases of dengue in study population.

MATERIALS & METHODS

This study was conducted in the department of general medicine in year 2015. It included 450 patients of both gender. All were informed regarding the study and written consent was taken. General information such as name, age, gender etc. was recorded in patients record file. After taking the history, clinical examination and laboratory investigation like complete hemogram, urea, creatinine, liver function test, chest, X-ray, ECG and ultra sound of abdomen was taken. Platelet counts were estimated. The diagnosis of pleural effusion was confirmed by X-chest. In ECG finding tachycardia was present in all the patients of shock and haemorrhage. All were subjected to serology NS1, IgM, IgG/IgM with rapid kit test. Results thus obtained were subjected to statistical analysis using chi-square test. P value <0.05 was considered significant.

RESULTS

Table I shows that out of 450 patients, males were 220 and females were 230. The diference was non- significant (P-1). Table II shows that age group 21-30 years consisted of 180 patients, age group 31-40 years had 135 patients, age group 41-50 years had 77 patients and >50 years had 58 patients. The difference was significant (P- 0.04). Graph I shows that common clinical manifestations in patients were fever (410), headache (250), myalgia (205), rash (157), bleeding (42), GIT manifestations (386) and shock (12). The difference was significant (P- 0.05). Graph II shows that platelets counts were <10000/cmm in 50 patients, <250000/cmm in 135 patients, <75000/cmm in 210 patients and 75000-150000/cmm in 55 patients. The difference was significant (P- 0.05). Graph III shows that serological test showed NS1 in 140 patients, IgM in 178 patients and IgG in 132 patients. Graph IV shows month wise distribution of patients. Most of cases were seen in winters, September (125), October (210), November (70), December (35), January (5), February, may and july (1) each and September (2). The difference was significant (P- 0.05).

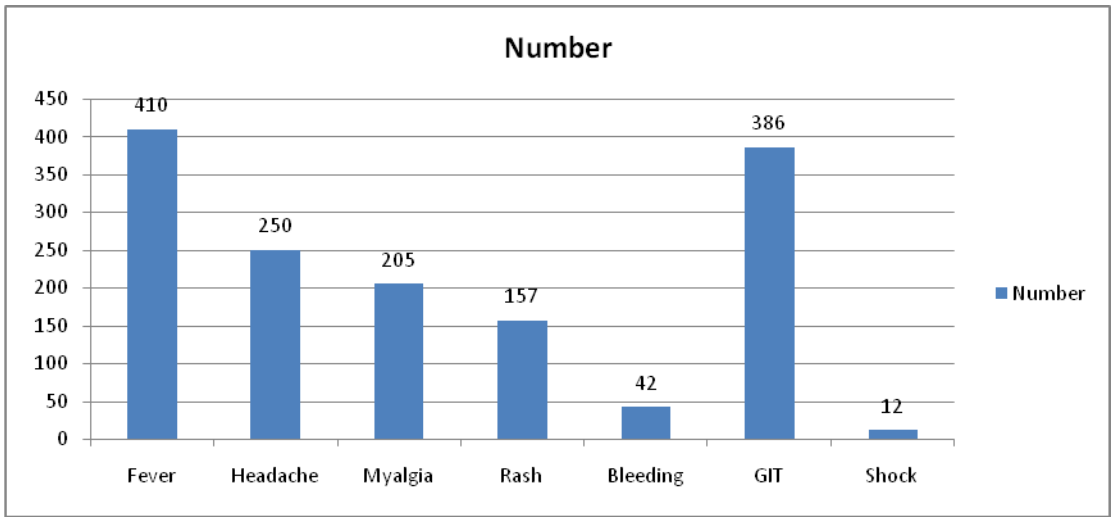
Table I Distribution of patients

Total - 450		
Males	**Females**	**P value**
220	230	1

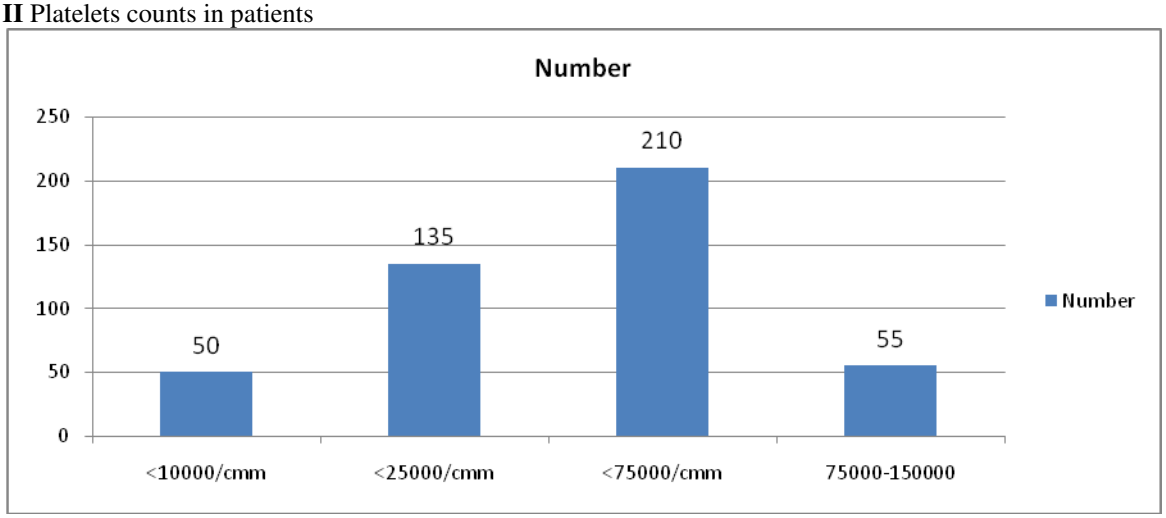
Table II Age wise distribution of patients

Age group	Number	P value
21-30	180 (40%)	0.04
31-40	135 (30%)	
41-50	77 (17%)	
>50	58 (12%)	

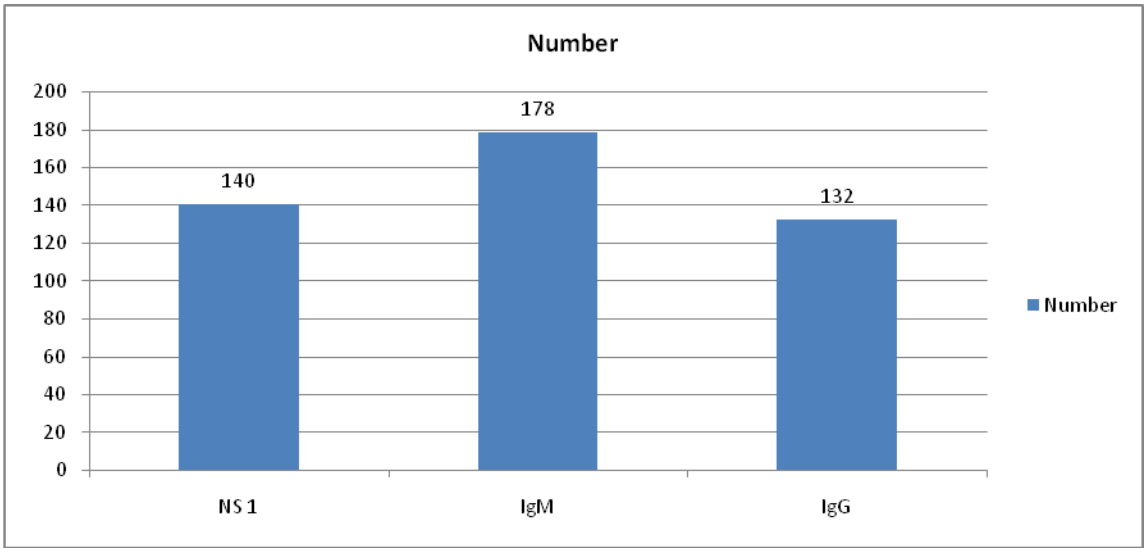
Graph I Clinical manifestations in patients



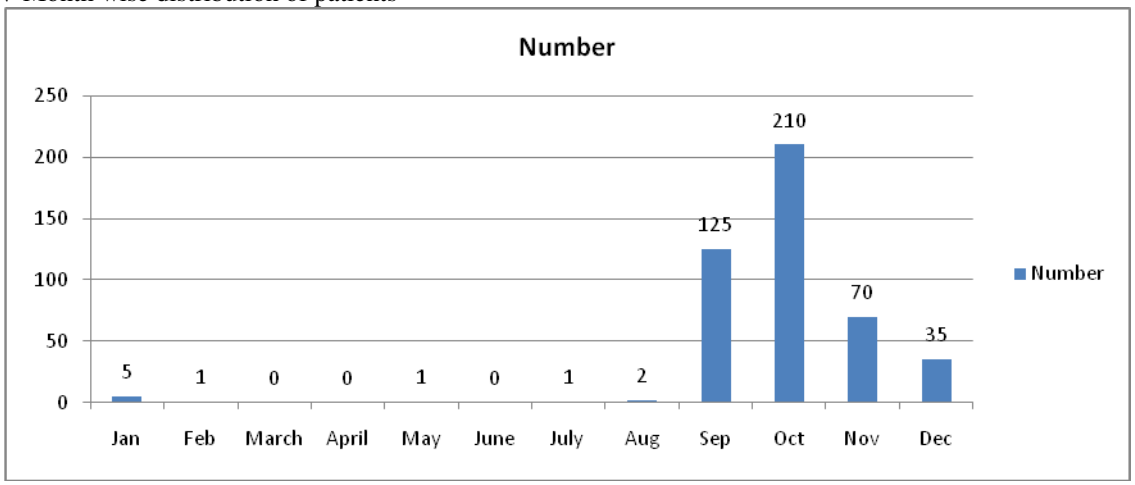
Graph II Platelets counts in patients



Graph III Serological distribution of Rapid test



Graph IV Month wise distribution of patients



DISCUSSION

In some people, the disease proceeds 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.[6] This critical phase, while rare, occurs relatively more commonly in children and young adults. The present study was conducted to assess the cases of dengue in study population.

In our study, out of 450 patients, males were 220 and females were 230. Age group 21-30 years consisted of 180 patients, age group 31-40 years had 135 patients, age group 41-50 years had 77 patients and >50 years had 58 patients. This is in agreement with Scott.[7]

We found that common clinical manifestations in patients were fever, headache, myalgia, rash, bleeding, GIT manifestations and shock. There may also be organ dysfunction and severe bleeding, typically from the gastrointestinal tract. Shock (dengue shock syndrome) and hemorrhage (dengue hemorrhagic fever) occur in less than 5% of all cases of dengue, however those who have previously been infected with other serotypes of dengue virus ("secondary infection") are at an increased risk. This is in agreement with Sarkar JK.[8]

We observed that platelets counts were <10000/cmm in 50 patients, <250000/cmm in 135 patients, <75000/cmm in 210 patients and 75000-150000/cmm in 55 patients. Sharma S[9] in his study concluded that majority of patients shows low level of platelets and further decrease in its counts may be harmful. Serological test showed NS1 in 140 patients, IgM in 178 patients and IgG in 132 patients. Graph IV shows month wise distribution of patients. Most of cases were observed in october followed by september, november, December and january etc. DF is regulated by seasonal variations especially during monsoon period when there is abundant rainfall and high humidity, with daily temperature reaching 30°C.[10] These climatic conditions provide excellent ground for mosquito breeding.

CONCLUSION

Dengue is a viral fever caused by biting of mosquito. Proper care should be taken to avoid accumulation of water to prevent spread of mosquitoes. Bleeding, fever and decrease in platelets counts should be dealt seriously.

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