

Original Research

Evaluation of Cases of Dengue Fever admitted to Medicine Department

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ABSTRACT:

Background: Dengue is caused by infection with one of four dengue virus serotypes. The present study was conducted to evaluate the cases of dengue admitted to Medicine department. **Materials & Methods:** This study was conducted on 82 patients of dengue fever of both gender. A thorough clinical examination was done followed by laboratory investigation like complete hemogram, urea, creatinine and liver function test. X-ray, ECG and ultra sound of abdomen was taken. **Results:** Out of 82 patients, males were 46 and females were 36. Age group 21-30 years consisted of 25 patients, age group 31-40 years had 19 patients, age group 41-50 years had 20 patients and 50-60 years had 13 patients and >60 years had 5. The difference was significant ($P < 0.05$). Common clinical manifestations in patients were fever (71), rash (56), myalgia (48), headache (52), shock (15), bleeding (44) and GIT manifestations (76). The difference was significant ($P < 0.05$). Serological test showed NS1 in 27 patients, IgM in 25 patients and IgG in 30 patients. The difference was non-significant ($P > 0.05$). **Conclusion:** Dengue is becoming common nowadays. Maximum cases were seen in age group 21-30 years.

Key words: Dengue, Mosquito, IgM

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INTRODUCTION

Dengue is caused by infection with one of four dengue virus serotypes, i.e. dengue. Infection with one serotype provides life-long immunity against re-infection by that same serotype, but not against the other serotypes.¹ The vast majority of dengue infections are asymptomatic but a proportion manifest as a non-specific febrile illness or progress to severe disease. *Aedes aegypti* is the principal mosquito vector of dengue. Adult mosquitoes shelter indoors and bite during the daytime. They are adapted to breed around human dwellings, in water containers, vases, cans, old tyres and other discarded objects. The secondary vector for dengue virus is *Ae albopictus*, which contributes significantly to transmission in Asia and whose presence is spreading in Latin American countries.²

Immunology of Dengue Fever is 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.³ 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.⁴ The present study was conducted to evaluate the cases of dengue admitted to Medicine department.

MATERIALS & METHODS

This study was conducted in the department of Medicine. It included 82 patients of dengue fever of both gender. All were informed regarding the study and written consent was taken. Ethical approval was taken before hand from institution.

General information such as name, age, gender etc. was recorded in patient file. A through clinical examination

was done followed by laboratory investigation like complete hemogram, urea, creatinine and liver function test. X-ray, ECG and ultra sound of abdomen was taken. All were subjected to serology NS1, IgM, IgG/IgM with rapid kit test. Results thus obtained were subjected to statistical analysis. P value <0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total - 82		
Gender	Males	Females
Number	46	36

Table I shows that out of 82 patients, males were 46 and females were 36.

Graph I Distribution of patients

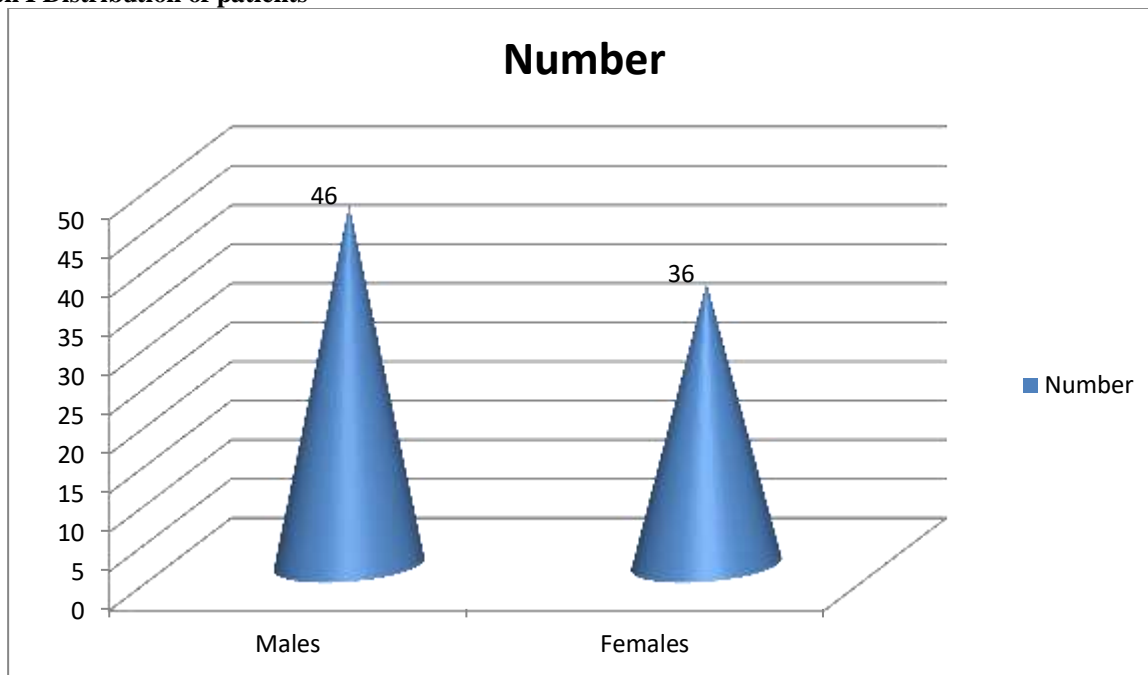


Table II Age wise distribution of patients

Age group (Years)	Number	P value
21-30	25	0.05
31-40	19	
41-50	20	
50-60	13	
>60	5	

Table II, graph II shows that age group 21-30 years consisted of 25 patients, age group 31-40 years had 19 patients, age group 41-50 years had 20 patients and 50-60 years had 13 patients and >60 years had 5. The difference was significant (P<0.05).

Graph II Age wise distribution of patients

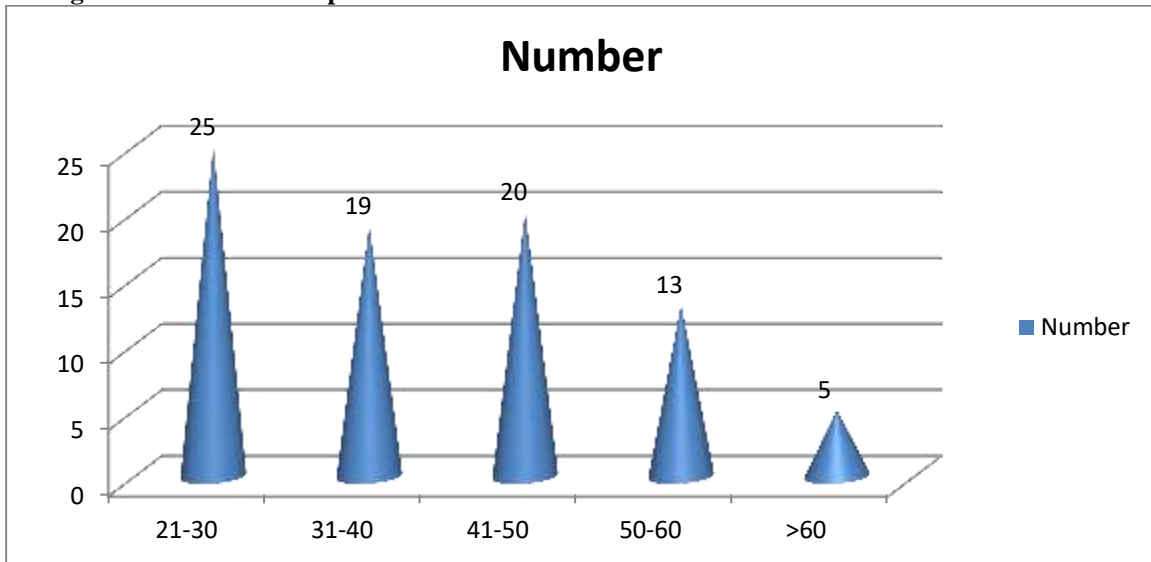
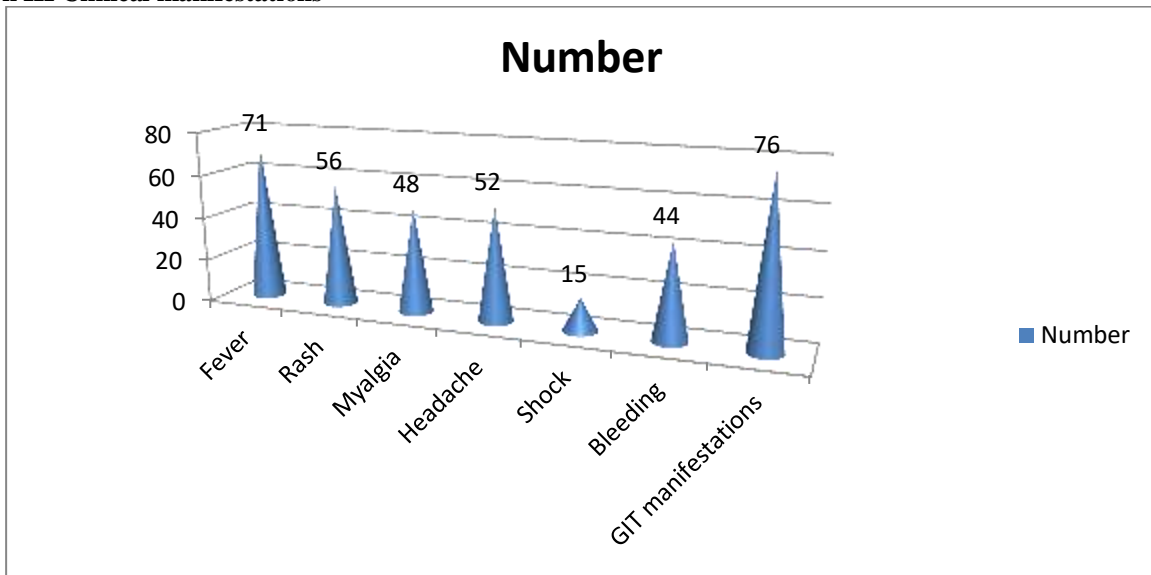


Table III Clinical manifestations

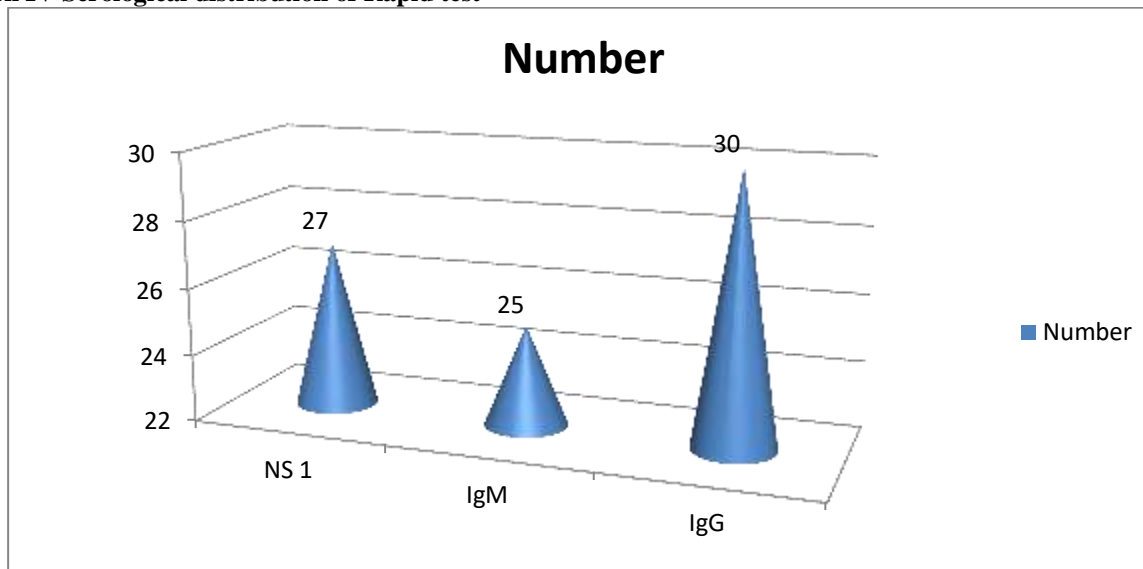
Clinical features	Number	P value
Fever	71	0.02
Rash	56	
Myalgia	48	
Headache	52	
Shock	15	
Bleeding	44	
GIT manifestations	76	

Table III, graph III shows that common clinical manifestations in patients were fever (71), rash (56), myalgia (48), headache (52), shock (15), bleeding (44) and GIT manifestations (76). The difference was significant ($P < 0.05$).

Graph III Clinical manifestations



Graph IV Serological distribution of Rapid test



Graph IV shows that serological test showed NS1 in 27 patients, IgM in 25 patients and IgG in 30 patients. The difference was non- significant ($P>0.05$).

DISCUSSION

Intensified dengue cases among the human population in 128 countries has become a major threat, as dengue transmission shows negative signs of decline even though many researches and mitigation programs have been worked on.⁵ Dengue fever is one of the major vector-borne viral diseases in the world, mainly in the tropical and subtropical regions. It is a most significant public health issue globally, and approximately one-third of the population of the tropical and subtropical regions is exposed to the risk of dengue.⁶ About 40% of the world's population is now at dengue risk, as estimated by the World Health Organization (WHO). 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.⁷ The present study was conducted to evaluate the cases of dengue admitted to Medicine department.

In our study, out of 82 patients, males were 46 and females were 36. We found that age group 21-30 years consisted of 25 patients, age group 31-40 years had 19 patients, age group 41-50 years had 20 patients and 50-60 years had 13 patients and >60 years had 5.

Sharma et al⁸ found that of 667 patients enrolled, 328 (49.2%) had prolonged hospitalization. The mean hospital stay was 4.88 ± 2.74 days. Multivariate analysis showed that dengue hemorrhagic fever, elevated alkaline phosphatase (ALP), prolonged prothrombin time (PT), activated partial thromboplastin time (aPTT) and

multiple-organ dysfunctions were independently associated with prolonged hospitalization. Overall case fatality rate was 1.1%. Factors associated with dengue mortality were age >40 years, secondary infection, comorbidities, acute kidney injury, prolonged PT, multiple-organ dysfunctions, hematocrit >20%, rhabdomyolysis and respiratory failure. Approximately half of the fatal cases in our study had prolonged hospital stay of greater than three days.

We found that common clinical manifestations in patients were fever (71), rash (56), myalgia (48), headache (52), shock (15), bleeding (44) and GIT manifestations (76). Suspected dengue cases were confirmed by laboratory criteria that were further subjected to clinical case definition of DVI. Suspected dengue infection was defined as the presence of fever and any two of the following symptoms: myalgia, headache, arthralgia, skin rash, retro-orbital pain, haemorrhagic manifestation(s) or leucopenia (white blood cell (WBC) count of $<4 \times 10^9 L^{-1}$). Suspected cases were confirmed by using at least one of the following criteria: (i) positive reverse transcriptase PCR result, (ii) presence of dengue immunoglobulin M and G antibodies in acute-phase serum by ELISA (Pan Bio Dengue IgM ELISA, Dengue IgM Dot Enzyme Immunoassay, SD Dengue IgM and IgG capture ELISA Kits; Standard Diagnostics, Korea) and (iii) at least fourfold increase of dengue-specific hemagglutination inhibition titres in convalescent serum compared with acute-phase serum.⁹

Dengue patients with MODs had two times higher risk of longer hospital stay in the present study. Notably, DHF in combination with MODs, HTN, coagulopathy and

elevated ALP might denote seriously sick patients who can potentially have more morbidity in the form of increased hospital stay.¹⁰ Identification of these patients at the earliest and their management with special care would be advantageous in reducing morbidity and hence their bed occupancy in the hospital. DVIs are rarely fatal, although fatal infections do occur due to plasma leakage, fluid accumulation, respiratory distress, severe bleeding or MODs.

CONCLUSION

Dengue is becoming common nowadays. Maximum cases were seen in age group 21-30 years.

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