Clinical Profile of Dengue Fever

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Abstract

Introduction: *Dengue infection is increasing proportionally to increased urbanization and compromised sanitation measures. Dengue infection poses a huge burden to the health-care system. Dengue infection vary in severity, ranging from influenza-like self-limiting illness to life-threatening dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS) which, if left untreated, are associated with mortality as high as 20%. Early diagnosis and management can decrease case fatality rate significantly.*

Objective: *To assess the clinical profile of dengue infection and to evaluate the outcome of dengue fever.*

Material and Method: *In this prospective observational study 129 patients who visited to Rohilkhand Medical College And Hospital between 1st Jan 2018 to 31st Dec 2018 were included. Those patients with confirmed dengue, with NS1 antigen and/or IgM dengue antibody positive were included in this study. Detailed history was taken and clinical examination was performed and laboratory investigations were done.*

Results: *129 patients were studied, majority were males. Fever was present in 100% of patients followed by headache, myalgia. In 90 cases platelet count was less than 50,000/cumm of which bleeding manifestation was found in 9 patients. Plerual effusion and ascitis were observed in 26 and 21 cases respectively. Hepatomegaly was noted in 19 cases and splenomegaly in 17. Leucopenia was present in 26 cases whereas raised liver enzymes were present in 114cases. The mortality rate was 1.55 %.*

Conclusion: *Dengue epidemic has increased in recent past probably due to unplanned urbanization with rapid construction activities, unhygienic condition and poor sanitation facilities contributing fertile breeding soil for mosquitoes. Early diagnosis and management can decrease mortality and morbidity of illness. Platelet transfusions have little role in management of dengue patients.*

Introduction

Dengue is the one of the common arthropod – borne viral (arboviral) disease affecting, approximately 2.5 billion people, living mainly in urban areas of subtropical and tropical regions are estimated to be at risk of acquiring dengue

infection[1]. Dengue is endemic in more than 100 countries of which most cases are reported from Southeast Asia and the Western Pacific regions[2]. In India, an increase in dengue incidence has been observed in past few decades and its outbreaks have been frequently reported from different parts of the country in both urban and rural populations[3-8]. Thus, dengue has become a major global public health concern.

Dengue virus, a member of the family flaviviridae, has four serologically related but genetically distinct virus serotypes, namely, Den-1, Den-2, Den-3 and Den-4[9] 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.[10] Many serotypes can be in circulation in an epidemic. Dengue is transmitted by mosquitoes of the genus Aedes, mostly Aedes aegypti[11]. Dengue infections vary in severity, ranging from influenza-like self-limiting illness to life-threatening dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS) which, if left untreated, are associated with mortality as high as 20%[2].

We undertook this prospective study in the Department of Medicine, Rohilkhand Medical College and Hospital between 1st Jan 2018 to 31st Dec 2018 to assess the clinical profile of dengue infection in hospitalized patients as well as to observe rare manifestations of dengue fever in the current outbreak.

Material and Method

In this Prospective observational study 129 patients who visited to Rohilkhand Medical College and Hospital between 1st Jan 2018 to 31st Dec 2018 were included. Those patients with confirmed dengue, with NS1 antigen and/or IgM dengue antibody positive were included in this study between age group of 19-69years. Those patients with concomitant malaria, typhoid, leptospirosis etc were not included in study. Detailed history was taken and clinical

examination was performed and laboratory investigations were done after explaining the nature of study and informed written consent taken from the cases. Routine investigation like hemoglobin, TLC and DLC, platelet count, hematocrit, liver function tests, blood urea and serum creatinine, chest radiograph and ultrasound scan of abdomen were done whereas specific investigation were advised wherever indicated to rule out other differential diagnosis.

Result

129 cases were reported between 1st Jan 2018 to 31st Dec 2018 and majority of these were reported in rainy season showing the breeding of mosquitoes during the said period. Out of 129, majority72 were male and 57 were female.
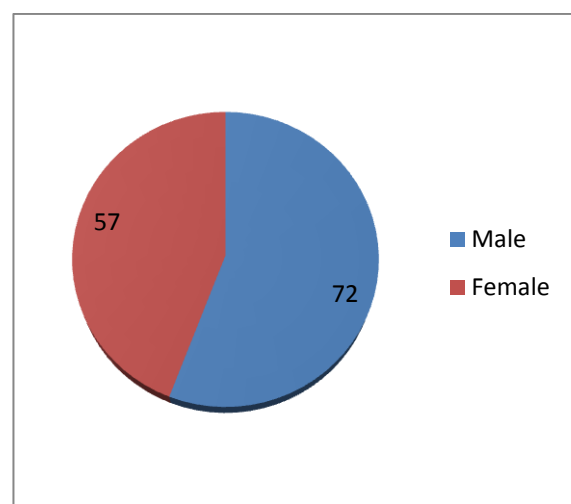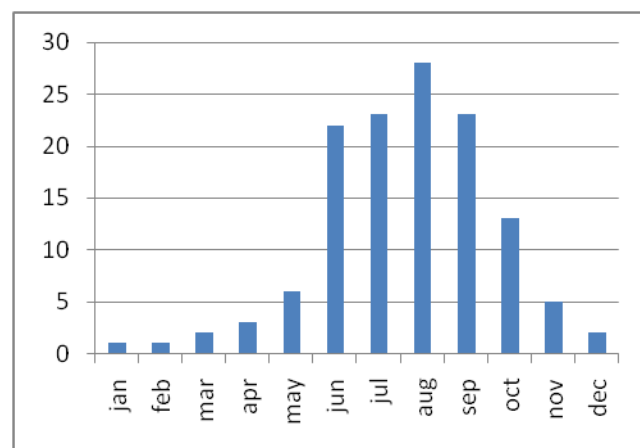
Fever was present in 100% of patients followed by headache, myalgia and rest as discussed in table below. (Table 1)

Table 1

Clnical features	No. of patients
Fever	129
Headache	121
Retro Obital pain	118
Myalgia	116
Abdominal Pain	31
Nausea / Vomiting	9
Diarrhea	4
Sub Conjunctiva hemorrhage	51
Skin Rash	48
Itching	17
Bleeding	9
Positive Tourniquet test	22
Pleural Effusion	26
Ascitis	21
Breathlessness	7
Seizures	2
Hepatomagaly	19
Spleenomegaly	17

Postive tourniquet test found in 22 patients while bleeding in form of petechiae, ecchymosis and epistaxis was manifested in 9 patients. Plerual effusion and ascitis observed in 26 and 21 cases respectively. Hepatomegaly was noted in 19 cases and splenomegaly in 17. (Table 1)

In 90 cases platelet count were less than 50,000/cumm, minimum platelet count which was noted was 4,000/cumm. Leucopenia was present in 26 cases whereas raised liver enzymes were present in 114 cases. (Table 2)

Table 2

Parameter	No. of pts.
Thrombocytopenia (<50,000/cumm)	90
Leucopenia (<4,000cumm)	26
Raised AST ,ALT	114
Raised hematocrit	27

All patients were managed after proper clinical examination and lab investigation with antipyretics, intravenous fluids. Blood transfusion and platelet transfusion were done whenever necessary in evidence of bleeding. Dengue shock syndrome was evident in 4 cases out of which 2 cases expired.

Discussion

Dengue is one of the important arboviral infection in tropical countries. Global incidence of dengue fever has increased significantly in the recent decades[6]. Dengue epidemic has increased in recent past probably due to unplanned urbanization with rapid construction activities, unhygienic condition and poor sanitation facilities contributing fertile breeding soil for mosquitoes. Moreover, there is increase in awareness in medical practitioners following the epidemics with availability of diagnostic tools in the hospitals have contributed to the increased detection of cases. Dengue has now become a expected post-monsoon phenomenon in many parts of India.[12,13] The hyperendemicity with two or more serotypes during the same time period have been widely recognised as important cause of disease severity in India.[14,15] Release of cytokines and stimulation of immunologic mechanism caused by interaction between dengue virus and host cell leading to vascular endothelial damage, recruitment of mononuclear cells and perivascular edema.

It was noteworthy to find out the difference in male: female dengue case ratio in our study. This might be probably due to more males working in outfields in the India. Covered dress worn by females might be other explanation for having fewer incidences of dengue in female. Higher incidence of dengue in rainy season is attributed to fact that it is breeding season of mosquitoes[16].

In our study fever was present in all cases. Headache, mayalgia, Abdominal pain, vomiting, retroorbital pain, and abdominal distension were seen commonly. The most common bleeding manifestations in both severe and non severe dengue were petechiae, purpura, and ecchymosis. Haematemesis was the most common bleeding manifestation reported in our study. There was no correlation between platelet counts and bleeding manifestations in our study. Various factors apart from thrombocytopenia lead to bleeding in dengue. They are decreased platelet function, fibrinogen consumption, prolongation of PT/PTT,

and vasculopathy[17]. Bone marrow suppression, Immune - mediated clearance and spontaneous aggregation of platelets to virus infected endothelium may be responsible for such thrombocytopenia.

Ascites and pleural effusion were also common and are indicative of severity of the disease.. Convulsion was very rare, two patients in the severe dengue group had convulsion after having DSS. Hepatomegaly and spleenomegaly were seen in 19 and 17 cases respectively.

Elevation of SGOT was significantly more compared to SGPT in the present study and is more associated with severity of infection which coincides with others also. SGOT rise more than SGPT in dengue may be due to involvement of myocytes .Values more than 1000 IU/L is seen in severe dengue. Very high levels of SGOT and SGPT indicate severity of the disease along with morbidity and mortality. This differs from the pattern seen in viral hepatitis[18].

The overall mortality in our study population was 1.55 %

Conclusion

Dengue epidemic has increased in recent past probably due to unplanned urbanization with rapid construction activities, unhygienic condition and poor sanitation facilities contributing fertile breeding soil for mosquitoes. Early diagnosis and management can decrease mortality and morbidity of illness. Platelet transfusions have little role in management of dengue patients.

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