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Clinical Profile of Dengue Infection in Hospitalized Patients of Delhi.

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ABSTRACT

Background: Aim and Objectives- To study clinical profile and frequency of various grades of Dengue fever as also to know their clinical outcome in admitted cases of Dengue infection in Delhi. **Methods:** during the epidemic of dengue, 150 consecutive patients of acute febrile illness of less than 10 days duration with positive dengue serology admitted to medical wards were studied. **Results:** Age group of 15-35 years was the most vulnerable. Symptoms and signs were more severe in younger age group than in the older. Male female ratio was 1:4. 59% of the patients had Classical DF, 50% had DHF and 10.7% had DSS or Complicated Dengue. Mortality was 0.67%. **Conclusion:** Dengue infection produces a spectrum of clinical illness ranging from a nonspecific viral syndrome to severe and fatal haemorrhagic disease with capillary leak and shock besides, expanded disease involving other organ systems including nervous system.

Keywords: Dengue fever, dengue haemorrhagic fever, dengue shock syndrome.

INTRODUCTION

In 2013, India accounted for 19% of total dengue patients of South East Asian Region.[1] All the 4 serotypes of dengue virus have been isolated in India.[2] Dengue infection can present from asymptomatic to severe course with high morbidity and mortality.[3] In India there have been very few studies to see clinical profile of dengue infection specially the proportion of having only dengue fever (DF) or mild disease, DHF (moderate Disease) and DSS (severe disease). Clinical presentation is not the same in every epidemic. Early recognition of the severity of the disease helps in timely and effective intervention and prevention of complications. Therefor this study was undertaken.

MATERIALS AND METHODS

During dengue outbreak, 350 consecutive admitted cases of acute fever of less than 10 days duration and without obvious focus of infection were subjected to dengue serology after at least 5 days of onset of fever. First 150 cases with positive serology (IgM antibodies/ NS-1) were included for the study. Their detailed clinical evaluation and relevant laboratory investigations, including hemogram, urine analysis, LFT, KFT, RBS, Widal test, blood group and if needed, blood culture, X-ray chest, ultrasonography, CT scan and CSF analysis were done. Clinical syndromes were classified as per WHO guidelines into:

(A) DF or mild, when acute febrile illness was associated with two or more of the symptoms of headache, retro-orbital pain, myalgia, arthralgia, rash, cytopenia and mild bleeding manifestations without evidence of capillary leak.
(B) DHF or moderate severity, when DF was associated with features of leak.
(C) DSS or severe when DHF was associated with features of circulatory failure.
(D) Complicated or expanded disease when severe organ damage was seen.

Demography of the subjects, frequency of various dengue syndromes including symptoms, signs and laboratory and imaging parameters were studied and incidence of various parameters was calculated. There final outcomes were analysed.

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RESULTS

A total of 150 consecutive dengue-serology positive cases were taken in the study. Male to female ratio was 4:1, their age distribution is depicted in [Table 1]. Most of the patients were 15-35 years old. Symptoms were also more severe in this age group.

Table 1: Age groups and features of dengue.

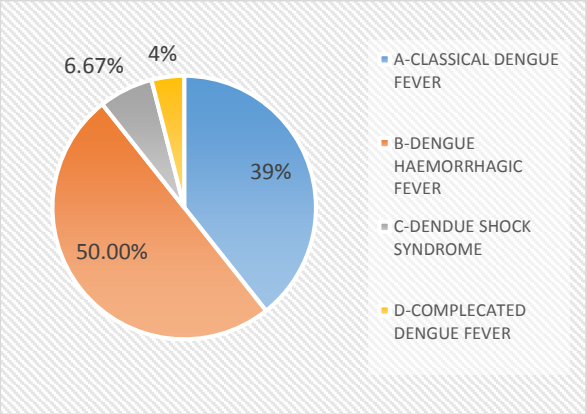
Age - group	Number of pts	Cough	Rash	Malena	Gum-bleeding	Epistaxis	Hematemesis	Abdominal-pain	Ascites	Pleural-effusion
< 15	15	0%	60%	33.3%	13.33%	6.66%	6.66%	20%	20%	0%
16-25	78	10.25%	30.76%	26.9%	24.35%	8.97%	2.56%	20.57%	6.4%	0.6%
26-35	44	11.36%	31.81%	30%	31.81%	15.90%	13.63%	27.27%	11.36%	1.33%
36-45	5	40%	20%	20%	0%	0%	0%	0%	60%	1.33%
46-55	5	40%	0%	0%	0%	0%	0%	60%	0%	0%
56-65	3	66.66%	0%	0%	0%	0%	0%	0%	0%	0%

Table 2: Platelet Count In Different Type Of Dengue

Platelet-Count	A	B	C	D
< 0.3	3 16.66%	14 77.77%	0 0%	1 5.55%
0.3 - 0.6	26 44.06%	28 47.45	3 5.08%	2 3.38%
0.6 – 1	17 37.77%	20 44.44%	6 13.33%	2 4.44%
>1	13 46.42%	13 46.42%	1 3.57%	1 3.57%

Table 3: Type of dengue fever and liver enzymes

SGOT In Different Type Of Dengue				
	A	B	C	D
<45 U/L	3 (27.27%)	6 (54.54%)	2 (18.18%)	1 (4.76%)
>45 U/L	56 (40.57%)	69 (50%)	8 (5.79%)	5 (3.62%)
SGPT in different type of dengue				
<45 U/L	6 (28.57%)	11 (52.38%)	3 (14.28%)	1 (4.76%)
>45 U/L	53(41.40%)	64 (50%)	7 (5.46%)	5 (3.12%)



Frequency of various symptoms and signs are shown in [Figure 2 & 3]. Cough was seen more in elderly patients [Table 1] while rash, mucosal and skin bleeds, capillary leak, were seen more in younger patients. In Table 2 & 3, platelet counts and transaminase levels of the patients are described.

Out of 150 patients, 59 (39.3%) were diagnosed as classical dengue fever, 75 (50%) as DHF, 10 (6.7%) as DSS and 6 (4%) as complicated dengue fever.

Peripheral smear examination and blood cultures of all the patients were negative. Two patients presented with altered sensorium one with seizures and another with aphasia. CSF examination could not be done because of thrombocytopenia. CT scan of one patient revealed ADEM and of another was normal. A 20-year-old patient developed myositis in the form of generalized muscle weakness with muscle tenderness and creatinine kinase of 2150U/L (normal value 51-294 U/L). Two patients had acalculus cholecystitis.

Overall outcome of the patients was good. All of them except one recovered completely. One patient died of shock, severe thrombocytopenia and internal bleeding.

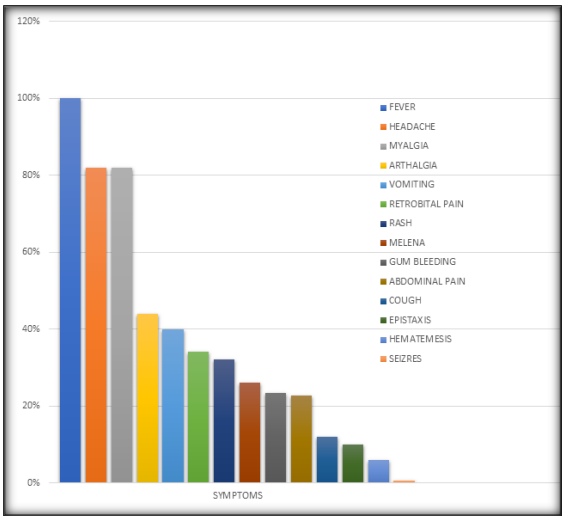


Figure 2: Clinical symptoms in dengue fever

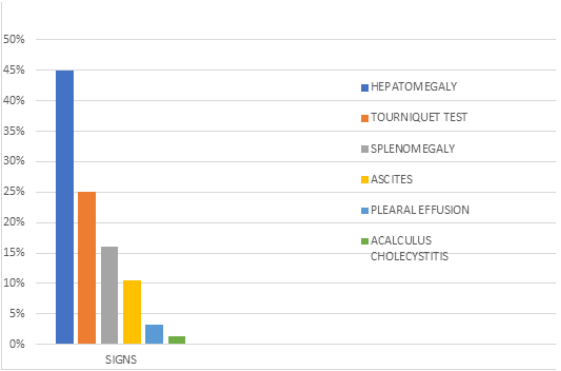


Figure 3: Clinical signs in dengue fever

DISCUSSION

Present study was conducted to collect information about clinical profile and outcome of dengue fever in the admitted patients of the disease. In the study, most commonly affected age group was 15-25 years, making 76% of the total cases. A similar trend was noted in other studies done in India.[4] This may be

due to the fact that young adults are not immune to all the strains of dengue virus. In this study male to female ratio was 4:1. It may be due to the fact that males are more exposed to mosquitoes as also they are more likely to visit hospital. This ratio was 3:1 in another Indian study.[5]

In this study 39.3% of the patients were classified as classical DF, 50% as DHF, 6.7% as DSS and 4% as complicated dengue fever. In a study by Rachel Daniel et al 18% were DF, 60% DHF and 22% were DSS.[6] Difference could be in triage while admitting the patients.

Headache and myalgias were seen in 82% of the patients of this study. Others have observed these symptoms from 66.6% to 97% of their patients.[4,7] Difference could also be due the difference in selection of cases or subjectiveness of the symptoms. Vomiting was complained by 40% of the subjects compared to 50.8% in another Indian study.[7] Morbiliform rash was seen in 32% of this study. Similar findings are reported by Rachel Daniel et al and Sharma SK et al.[5,6] Similar to observations made by other investigators pain in abdomen was complained by 22% of our patients.[5,7] This symptom is attributed to hepatomegaly and capillary leak from the peritoneum. In the present study bleeding from various sites was seen in 61% of patients. Similar incidence is reported from India and Australia.[5,8] Gastrointestine was prominent site of bleed in the present study, purpura and nasal bleed were prominent in other studies.[5,9]

Encephalitis was found in 2% of our cases compared to 5% in patient studied by Sharma et al.[5] one of our patients had inflammatory myopathy. To the best of our knowledge this has not been reported before. This patient recovered fully.

Similar to other studies, Alanine aminotransferase and aspartate aminotransferase were raised in about 90% of patients of this study. Rise was < 500 u/l. Virus induced hepatic damage along with shock and hypoxia are postulated as pathogenetic mechanisms.

Although thrombocytopenia was a common finding, seen in 81.3% of patients, there was poor correlation between thrombocytopenia and bleeding tendency. Overall prognosis in our study was good, except one death all patients fully recovered. Weakness of this study is that it is an institution based study and does not reflect the spectrum seen in the community.

CONCLUSION

Majority of dengue infection patients present as simple viral fever requiring rest and antipyretics only. However almost half of the admitted patients need close monitoring and intensive treatment. One in ten of hospitalized patients develop shock or a organ damage. Though the symptoms are more severe in young patients, complications are seen in old patients. Majority of the patients fully recover.

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