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CLINICAL PROFILE OF DENGUE FEVER: A PROSPECTIVE STUDY

General Medicine

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ABSTRACT

Background: Dengue fever is one of the most common arboviral mediated outbreaks reported with increased prevalence year after year with considerable morbidity and mortality. The study aimed to evaluate clinical profile of dengue fever. **Methods:** Prospective observational study was undertaken among adult patients. All dengue fever patients who attended OPD and IPD at Mahatma Gandhi Hospital, Jaipur between January 2020 to June 2021 were enrolled in this observational study. The patients were included if aged 18-65 years of either sex, IgM positive, NS1 antigen positive, and/or PCR positive. **Results:** Mean age of the subjects was 34.89±11.55 years with a range from 18 to 60 years. A majority of the patients aged between 21 and 40 years (57.9%). Male to female ratio was 2.17:1. NS1 antigen was detected in 64.9% of the patients and IgM antibody was detected in 40.4% of the patients. The most common dengue serotype was DEN-2 (56.1%) followed by DEN-1 (24.6%), and DEN-3 (19.3%). In this study, 91.5% of the patients had liver dysfunction while 5.2% had renal dysfunction. Urine routine examination revealed the presence of protein in one patient. No mortality was reported in this study. **Conclusions:** Early diagnosis, strict monitoring, appropriate fluid management and is important to get a favourable outcome.

KEYWORDS

Dengue, NS-1, Organ dysfunction

INTRODUCTION

Dengue fever is a mosquito-borne disease spread by infected mosquitos of the Aedes genus. Dengue virus is a member of the Flavivirus genus with four serotypes that cause dengue illness (DEN-1, DEN-2, DEN-3, and DEN-4).[1] Dengue fever is endemic in practically every state in India, and it is the primary cause of hospitalisation.[2]The disease, which was previously only found in urban areas, is now being recorded in both peri-urban and rural locations.[3,4]

Dengue fever is a severe influenza-like sickness that affects people of all ages (infants, children, adolescents, and adults).[5] The WHO divides DF into two categories: mild and severe.[1,6] Excessive bleeding, organ damage, or substantial plasma escape are associated with severe instances, but uncomplicated ones are not.[1]

Dengue fever is most commonly found in adults and older children after both primary and secondary infections. A biphasic, high-grade fever that lasts 3 days to 1 week marks the beginning of symptoms.[7] Other symptoms include severe headaches (especially in the retrobulbar region), lassitude, myalgia, and painful joints, metallic taste, appetite loss, diarrhea, vomiting, and stomachache. Because of the concomitant myalgia and joint discomfort, dengue is sometimes known as breakbone fever.[6]

The present study assessed clinical profile of dengue fever patients.

Patients and method

All dengue fever patients who attended OPD and IPD at Mahatma Gandhi Hospital, Jaipur between January 2020 to June 2021 were enrolled in this observational study. The patients were included if aged 18-65 years of either sex, IgM positive, NS1 antigen positive, and/or PCR positive.

Exclusion criteria were pregnancy, patients with chronic alcoholism chronic liver diseases, rheumatological disorders/ connective tissue disorder, other febrile illness, mixed infections, patients with known hematological disorder or platelet disorder, patients on heparin, patients on chemotherapy and radiotherapy/immunocompromised patients, any history of blood transfusion, and/or patients with refused consent. The patients' sociodemographic characteristics, laboratory investigations, and outcome were noted on a proforma.Data were presented as frequency, percentage, mean, and standard deviation.

RESULTS

Sociodemographic characteristics

During the study period, a total of 57 patients were included. Table 1 shows sociodemographic characteristics of the study participants. Mean age of the subjects was 34.89±11.55 years with a range from 18 to 60 years. A majority of the patients aged between 21 and 40 years (57.9%). Male to female ratio was 2.17:1.

Dengue investigations

NS1 antigen was detected in 64.9% of the patients and IgM antibody was detected in 40.4% of the patients (Table 2). The most common dengue serotype was DEN-2 (56.1%) followed by DEN-1 (24.6%), and DEN-3 (19.3%) (Figure 1).

Organ dysfunction

In this study, 91.5% of the patients had liver dysfunction while 5.2% had renal dysfunction.

Urine routine examination

Urine routine examination revealed the presence of protein in one patient.

Outcome

No mortality was reported in this study.

Table 1: Sociodemographic characteristics

		Frequency	Percentage
Age (Years)	≤20	5	8.8
	21-40	33	57.9
	41-60	19	33.3
Sex	Male	39	68.4
	Female	18	31.6

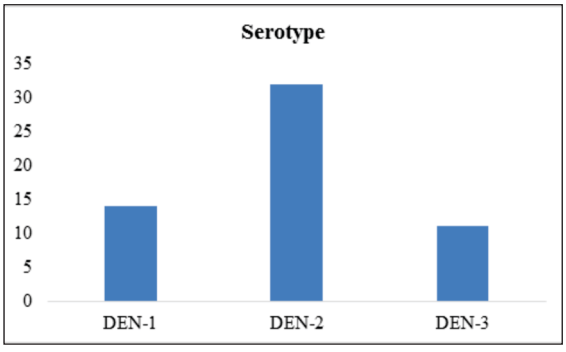

Figure 1: Dengue Serotype

Table 2: Dengue investigations

		Frequency	Percentage
NS1 antigen	Positive	37	64.9
	Negative	20	35.1
IgM antibody	Positive	23	40.4
	Negative	34	59.6

DISCUSSION

In our study, mean age of the subjects was 34.89±11.55 years with a range from 18 to 60 years. The bulk of the patients were between the ages of 21 and 40 years (57.9 percent). According to Padmaprakash et al, the most prevalent age-group affected was 18-30 years old, which accounted for 54.3 percent (n-408) of all cases, followed by 31-45 years old, which accounted for 28.2 percent (n-212) of all cases. Dengue fever was uncommon in people above the age of 60, with only 1.6 percent of cases (n-12).[8] Padyana et al observed that the mean age of the cohort of patients was 37 years. ICU requirement was significantly high among age group of 21-40 (58.4%).[9] Similarly, in a study by Juneja et al. 39.6 year was the mean age of patients requiring ICU admission with dengue fever suggesting that younger age group is at higher risk compared to older.[10]

The male to female ratio in our study was 2.17:1. Kumar et al. recently observed that among all seropositive cases, the proportion of males was higher than females, with a ratio of (M:F) 1.54:1.[11] Many other Indian investigations, including those conducted separately by Agarwal et al., Ray et al., and Wali et al., reported a higher number of male patients infected with dengue than females, with sex ratios of 1.9:1, 1:0.57, and 2.5:1, respectively.[12–14]

NS1 antigen was found in 64.9 percent of the patients in our study, while IgM antibody was found in 40.4 percent of the patients. NS1 antigen will be found in high titres in the patient's sera during the acute phase of the illness. It can be found in both primary and secondary infections, however the rate of identification in acute primary infections is higher than in acute secondary infections. The presence of NS1 in the blood can be detected from the first day of symptoms till day 9 to 18 after the onset of symptoms. NS1 antigen ELISA has a sensitivity of 96.8%, specificity of 53.3 percent, positive predictive value of 81.6 percent, and negative predictive value of 88.9% in a study by Anand et al.[15]

The most prevalent dengue serotype in our study was DEN-2 (56.1%), followed by DEN-1 (24.6%), and DEN-3 (3.3%). (19.3 percent). Dengue virus epidemiology and dominant serotypes are always changing. Outbreaks of dengue occurred in Rajasthan by DV- 1 and DV-3[16], DV-333, Madhya Pradesh by DV-3[17], Gujarat by DV-2[18] and in Haryana by DV-2.[19]

Multiorgan involvement in dengue is well known. In our study we observed Hepatic involvement among 91.5%. In a study by Nayak et al, liver involvement was noted among 97.33%, AST and ALT were significantly high among dengue hemorrhagic fever and dengue shock syndrome group.[20]

In our study, there was no mortality. Mortality has been shown to be high among age group of >60 years in prior studies.[21] A study had younger patients between 21 years and 40 years requiring ICU and mortality was noted to be high among females between the age group of 21–40 years.[9]

CONCLUSION

Dengue mainly affects younger population with male preponderance. SGOT increase is more significant with respect to the rise of SGPT because some patients may not show SGPT elevation and point towards the help in diagnosing the diseased condition sometimes in early stages and gives a query to rule out dengue infection in acute febrile illness.

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