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ORIGINAL ARTICLE

Frequency of Bleeding Diathesis amongst patients presenting with Dengue Fever in Tertiary Care Hospital

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ABSTRACT

Introduction: Dengue fever is a mosquito-borne viral disease caused by dengue virus (DENV) - a single stranded RNA virus, belongs to the genus Flavivirus.

Objective: To determine the frequency of bleeding diathesis amongst patients presenting with dengue fever in tertiary care hospital

Methodology: This study was descriptive cross-sectional piloted at the Medicine Department, Hayatabad Medical Complex, Peshawar for duration of six months from June 2021 to December 2021. Totally 135 patients were included in our study. All the information like gender, age, sign and symptoms and bleeding diathesis were recorded on predesigned Performa. All the data was analyzed by using SPSS version 24.

Results: In this study, a total of 135 patients were included. Amongst 135, 90(66.7%) were males and female were 45(33.3%). Bleeding Diathesis among 135 patients was observed in 47(34.8%) patients.

Conclusion: Our study concludes that bleeding diathesis commonly occur in dengue patients. As a result, screening for coagulation abnormalities and treating them early may assist to prevent additional consequences in dengue patients.

Keywords: Bleeding; Diathesis, Dengue fever

INTRODUCTION

Dengue fever is a mosquito-borne viral disease caused by dengue virus (DENV) - a single stranded RNA virus, belongs to the genus Flavivirus[1,2]. There are four serotyoes of dengue virus i.e. DENV 1-4 transmitted to humans principally by mosquito Aedes Aegypti[3,4]. These mosquitoes usually breed in stagnant water, water collected in containers, water based air cooler and tire dumps. Dengue fever is usually epidemic in the post monsoon period in tropical and subtropical regions globally [5].

Around 50-100 million people are infected with dengue virus and among these, about 50,000 cases develop dengue hemorrhagic fever throughout the world. Out of these, 2000 die annually due to its complications. Mortality rate in treated dengue hemorrhagic fever/dengue shock syndrome is 1% but increases to 20% if not treated [6, 7].

Increased systemic vascular permeability, which results in decreased intravascular plasma volume and, in extreme instances, hypovolemic shock, is the symptomatic hallmark of dengue hemorrhagic fever (DHF). Additionally, thrombocytopenia and coagulopathy are significant markers of symptomatic infection. Dengue hemorrhagic fever is characterized by severe thrombocytopenia and enhanced vascular permeability (DHF). Patients with DHF appear to have an immune mechanism that causes thrombocytopenia because of their quick destruction of platelets [8, 9]. According to one of the studies done by Munir MA, et al, out of 841 patients, 188 had hemorrhagic manifestations of dengue fever making 22 % of the total patients [10]. A similar study from Barazil shows that hemorrhagic manifestations occurred in 35.8% of the cases [11]. A UK-based study reveals that dengue hemorrhagic fever (DHF) accounts for 69.4% of all dengue infected cases [12].

As dengue fever in our population is prevalent and very little data is available in our population about the clinical manifestations of the dengue fever especially the bleeding manifestations. This study will surely add something to the already existing literature about dengue fever. Knowing the tendency of bleeding in dengue fever will help us in the management of patient and prevention of complications and reducing the morbidity and mortality caused by the dengue fever.

MATERIALS AND METHODS

This study was descriptive cross-sectional, piloted at the Medicine Department, Hayatabad Medical Complex, Peshawar for duration of six months from June 2021 to December 2021. The study approval was given by the ethical and research committee of the hospital. An informed consent in written was taken from all the participants. The inclusion criteria for our study were dengue patients of both the gender having age between 18-50 years, confirmed By Dengue NS l Ag with the history of fever while the exclusion criteria was patients with concurrent bacterial/viral/parasitic infection, patients with chronic liver disease, chronic kidney disease, cancer and cardiac diseases, all the pregnant or menstruating ladies, drug

causing bleeding or coagulopathy or thrombocytopenia or bone marrow suppression. Totally 135 patients were included in our study. The admitted patients in their hospital stay were observed for bleeding diathesis in both morning and evening rounds. A patient were labeled as having bleeding diathesis if he/she develops petechiae , purpura, epistaxis, malena, hemetemesis , per vaginal bleeding or subconjunctival bleeding. Under strict aseptic conditions 2 ml of blood were obtained from all patients on daily basis and were sent to our hospital laboratory for complete blood count and platelet count, total leukocyte count and haematocrit will be noted daily to see the trend of cell counts and hematocrit in both patients with and without bleeding diathesis. A patient was discharged once his/her plateslets count is above 50000 per cc of blood for two consecutive days.

All the information like age, gender, episodes of dengue (1' or 2nd time of dengue infection), population distribution (rural or urban), presenting symptoms (fever, headache, vomiting, muscle and joint pains, skin rash), bleeding diathesis and bleeding manifestations and complete blood picture were recorded in a pre design Performa. All the data were entered and analyzed by SPSS version 24.

RESULTS

Amongst 135 patients, 90(66.7%) were males and female were 45(33.3%). On the basis of age distribution 49(36.3%) patients were in the age group 18-30 years, 41(30.4%) in 31-40 years while 45(33.3%) patients were observed in the age group 41-50 years. Mean age was 35 Years with SD ± 3.87. In our study, amongst 135 patients, 72 (53.3%) were from urban areas while 63(46.7%) were from rural area. (Table 1) Episodes of dengue among 135 patients were analyzed as n= 1st was 81(60.0%) and 2nd was 54(40.0%).

Table 1: Demographic features of the participants

Parameter	Sub-category	Frequency (%)
Age	18-30 Years	49 (36.3%)
	31-40 Years	41(30.4%)
	41-50 Years	45(33.3%)
Gender	Male	90(66.67%)
	Female	45 (33.33%)
Residence	Urban	72(53.3%)
	Rural	63 (46.7%)

Table 2: Clinical features of the participants

Parameter	Sub-category	Frequency (%)
Episode of dengue	1st	81 (60.0%)
	2nd	54 (40.0%)
Symptoms	Fever	22 (16.3%)
	Myalgyias/arthralgia	28 (20.7%)
	Vomiting	20 (14.8%)
	Diarrhea	26 (19.3%)
	Pain abdomen	14 (10.4%)
	Rash	13 (9.6%)
	Others	12 (8.9%)
Bleeding diathesis	Yes	47 (34.8%)
	No	88 (65.2%)

Based on sign and symptoms, fever was observed in 22(16.3%) patients, Myalgyias/arthralgia in 28(20.7%), Vomiting in 20(14.8%), diarrhea in 26(19.3%), Pain in abdomen in 14(10.4%), rash was in 13(%) patients while others symptoms were observed in 12(8.9%) patients. Bleeding Diathesis among 135 patients was observed in 47(34.8%) patients. (Table 2)

DISCUSSION

Dengue has a broad range of symptoms, making it difficult for doctors to diagnose. Certain individuals present with no symptoms. Infected babies and young children often have minor rashes on the body and fever but have no other symptoms. These minor symptoms may also be present in older children and adults, or they may present with characteristic dengue symptoms like high fever for 2-7 days, severe muscular pain, and pain in bones, and joints, discomfort behind the eyes, exhaustion, headaches, light bleeding, rashes, nausea and vomiting. The fever response in dengue disease has two peaks. During the first few days of the illness, the patient has a high body temperature, which subsequently drops and rises again for a second time. There are other signs of dengue fever, such as decreased white blood cell count and a low blood platelet count. Skin hemorrhages may show as red or purple areas on the body in dengue fever patients. Dengue fever recovery may take several weeks, and patients may feel fatigue and depression during that time [13, 14].

In the present study apart from typical signs and symptoms, thrombocytopenia was taken as one of the diagnostic criteria for dengue fever and same was reported by other workers [10, 11]. As this was a Lahore based study therefore maximum cases came from Lahore where people were sensitized about dengue and its complications following the massive outbreak of dengue fever in 2011 [12]. In our study, amongst 135 patients, 72 (53.3%) were from urban areas while 63(46.7%) were from rural area. These findings are not in agreement with the previous study who reported high prevalence of the disease in rural population [15]. In our study, 90(66.7%) were males and female were 45(33.3%). These findings were comparable to another study who reported male predominance [16]. Based on sign and symptoms, fever was observed in 22(16.3%) patients, Myalgyias/arthralgia in 28(20.7%), Vomiting in 20(14.8%), diarrhea in 26(19.3%), Pain in abdomen in 14(10.4%), rash was in 13(%) patients while others symptoms were observed in 12(8.9%) patients. These findings were comparable to previous studies [17, 18]. Bleeding Diathesis among 135 patients was observed in 47(34.8%) patients in our study. The frequency of bleeding diathesis in our study is higher than previous studies [19]. In our study, bleeding diathesis was observed in patients with very low platelet count.

CONCLUSION

Our study concludes that bleeding diathesis commonly occur in dengue patients. As a result, screening for coagulation abnormalities and treating them early may assist to prevent additional consequences in dengue patients.

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