Original Research Paper

Physiology

EVALUATION OF PLATELET COUNT IN DENGUE FEVER AMONG THE PATIENT VISITING NALANDA MEDICAL COLLEGE HOSPITAL, PATNA, BIHAR.

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ABSTRACT

Background: Dengue is one of the most prevalent mosquito-borne arboviral infections in India. Seventy percent of the 96 million apparent infections occur in Asia, in which India is making upto one third of the total. Despite considerable efforts to control the mosquito populations, dengue fever has emerged, spread and established itself rapidly. **Objective:** To Evaluate platelet count in Dengue Fever. **Material and Methods :** The present study was carried out retrospectively among patients clinical features of dengue infection and were serologically positive ,at Nalanda Medical College Hospital , Patna. Appropriate statistical tests were used whenever applicable. **Results:** Among the 31 Patients who were found to be seropositive for Dengue, majority 12 of Dengue case were in the age group of 15-30 years followed by less than 15 years.. A statistically significant association (p<0.05) was found between the age groups and severity of thrombocytopenia, **Conclusion:** This retrospective study highlighted the drastic fall in the platelet count which is life threatening. More studies in this regard could further reveal the correlation between platelet count and dengue outbreaks, which would help in making the strategies and plans to forecast any outbreak in future well in advance

KEYWORDS : Dengue infection, Platelet count , Dengue Fever

INTRODUCTION

Dengue is the most prevalent mosquito-borne viral infection worldwide, with 100 million cases of Dengue Fever (DF) and half a million cases of Dengue Haemorrhagic Fever (DHF) annually. [1][2]

Since 1989, there have been regular epidemics of DHF in India. During the past few years, the characteristics of dengue in India appear to have changed. For instance, a decade ago, children were predominantly affected, but in recent years clinicians have seen increasing numbers of adult dengue patients, with both significant morbidity and increasing numbers of adult deaths due to dengue.

Dengue fever is an acute febrile illness caused by four serotypes of Dengue virus and in older children characterized a spectrum of disease, biphasic fever, myalgia, arthralgia, rash and leucopoenia.

Dengue haemorrhagic Fever (DHF) is characterized by hemoconcentration, abnormality of hemostasis and in severe cases by a fluid & protein losing shock syndrome (Dengue Shock Syndrome, DSS).

In majority of patients thrombocytopenia is transient and asymptomatic but in significant number of cases there is bleeding manifestations . [3] Spontaneous bleeding is noted in platelet count of <20,000 in majority of patients.

Petichae/purpura is seen in platelet count in the range of 20,000-40,000. This signifies the need to evaluate platelet count and the follow up after platelet transfusion.

OBJECTIVE

To Evaluate platelet count in Dengue Fever.

MATERIAL AND METHODS

The present study was conducted retrospectively for a period of 6 months from July 2016 to December 2016 among 31 patients who were serologically positive for Dengue infection admitted in Nalanda Medical College Hospital, Patna. Platelet count was repeated regularly during the hospital stay.

Inclusion Criteria-

Patients with clinical features and serologically positive dengue infections were included.

Exclusion Criteria-

Patients with thrombocytopenia but serologically negative were not included.

Data Analysis was done by Epi-info software.

RESULT

Table-1 Age And Sex Distribution Of Dengue Fever Cases

Age Groups	Sex		Total no.(%)
	Male n(%)	Female n(%)	
<15years	5(26.3)	3(25.0)	8(25.8)
15-30years	7(36.8)	5(41.6)	12(38.7)
31-50years	5(26.3)	2(16.7)	7(22.6)
>50years	2(10.5)	2(16.7)	4(12.9)
Total	19(61.2)	12(38.7)	31(100)

Table 2- Age Wise Distribution And Platelet Count

Age Group	Platelet Count				Total	P- Value
	<20000	21000-50000	51000-100000	>100000		
<15 years	1 (12.5%)	2 (25%)	4 (50%)	1 (12.5%)	8 (25.8%)	<0.05
15-30years	1 (8.33%)	3 (25%)	4 (33.33%)	4 (33.33%)	12 (38.7%)	
31-50years	1 (14.2%)	2 (28.5%)	2 (28.5%)	2 (28.5%)	7 (22.6%)	
Above 50 years	1 (25.0%)	1 (25.0%)	1 (25.0%)	1 (25.0%)	4 (12.9%)	

This study showed that , Majority, 12 (38.7%) of the dengue cases was noted in the age group of 15 – 30 years, followed by less than 15 years of age 8(25.8 %). Among the dengue cases, 61.2 % were males and 38.7% were females. The age and sex distribution is given in [Table-1] Out of 30 patients , 11 (35.0%) had mild thrombocytopenia (platelet count 51,000 – 1 lakh), 8 (25.0%) had moderate thrombocytopenia (platelet count 20,000 – 50,000) and remaining 4 (12.0%) had severe thrombocytopenia (platelet count <20,000). Thrombocytopenia was found to be more severe in age group <15 years, when compared to other age groups. A statistically significant association (p<0.05) was found between the age groups and severity of thrombocytopenia [Table-2].

DISCUSSION

In the present study, patients with Serological confirmation were in the age group of 15-30 years and this is in accordance with the study by Pruthvi et al.[4] In Pakistan, study by Erum et al., shows median age group affected by dengue infections are young patients and males were affected predominantly [5] In our study DI was predominant among males (61.2%) than females (38.7%). This is in accordance with the study by Jayashree et al.[6]

The dengue virus induced bone marrow suppression decreased platelet synthesis, an immune mechanism of thrombocytopenia caused by increased platelet destruction appears to be operative in patients with DHF . [7]

CONCLUSION

This study highlighted a drastic fall in the platelet count which is life threatening and may lead to bleeding episodes if close monitoring of platelet count is not assured. Median age group of Dengue patients have decreased and younger patients have become more susceptible. The only way to prevent from infection and developing Dengue fever is to avoid being bitten by the mosquito. Further research needed about the significant dengue epidemic during climatic conditions.

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