Original Article

DIFFERENT CLINICAL PRESENTATIONS OF DENGUE AT ASTTH

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Objective: To observe the different clinical presentations of dengue fever in patients presenting with acute febrile illness.

Material & Methods: This retrospective observational study was conducted in medicine department, Akhtar Saeed Trust Teaching Hospital, Lahore in September 2011. Patients presenting with acute febrile illness in both OPD and emergency were included. History was taken and clinical examination was done. Blood samples were collected for Complete blood count, Liver function tests, Renal function tests and serology for Dengue virus IgM by ELISA. Symptoms and investigations were analyzed.

Results: Total 300 patients were included in the study. Females were187 (62.3%) and males were 113 (37.7%). Mean age of patients was 33.4 years. Headache was the most common presentation in 284 (94.6%) patients, myalgia was present in 271 (90.3%) patients, fever was present in 257 (85.6%) patients, vomiting in 190 (63.3%) and rash with petechie in 53 (17.6%) patients. Leukopenia and thrombocytopenia was present in all 300 patients. Liver function tests were deranged in 209 (69.7%) patients and dengue IgM was present in 127 (42.3%) patients. Serum urea was deranged in 113 (37.7%) patients.

Conclusion: Fever associated with chills and rigors, headache, myalgia, vomiting, rash, petechie and hemorrhagic manifestations, leucopenia, thrombocytopenia and raised ALT are satisfactory parameters to screen for suspected dengue virus infections. However, diagnosis cannot be confirmed unless supported by dengue specific IgM serology.

Keywords: Dengue fever, dengue virus.

Introduction

Dengue fever is the most common arboviral disease in the world. It is caused by dengue virus which belongs to Flavivirus family.[1] It is caused by the bite of female mosquito Aedes aegypti to human being.[2] It is single stranded RNA virus. It has four serotypes and there is no cross protection between them.[3] Every year, ~50 million people are affected from dengue infections and ~500,000 individuals are hospitalized with dengue hemorrhagic fever, mainly in Southeast Asia, the Pacific and the Americas.[4] Dengue causes a spectrum of disease, ranging from a mild febrile illness to a life-threatening dengue hemorrhagic fever.[5] Symptoms include fever, headache, severe myalgia and occasionally rash.[6] Laboratory abnormalities include thrombocytopenia, leucopenia, raised ALT and AST and raised urea and creatinine. Mortality by this virus occurs due to bleeding from different sites, dengue shock syndrome and encephalomyelitis. Bleeding occurs due to low platelets and ineffective functioning of platelets in addition to other unknown factors. Shock occurs due to increased capillary leakage. Encephalitis occurs due to direct effect on brain. Primary infection to any serotype is thought to induce lifelong protective immunity to that infecting serotype.[7]

In Pakistan, first outbreak of dengue fever was reported in 1994 whereas another epidemic occurred in 2005.[8] Other outbreaks in Pakistan occurred in 2003[9] and in 2006 in Karachi.[10] Purpose of this study was to determine the frequency of different clinical presentations and complications of dengue fever. This will help in early diagnosis and treatment of complications of dengue fever.

Material & Methods

This retrospective study was conducted at medicine department, Akhtar Saeed Trust Teaching Hospital, in September 2011. This study was conducted after approval by the institutional ethical committee and getting informed consent from patients. A total of 300 adult patients were included in the study with age between 18 to 60 years irrespective of gender. Patients with acute febrile illness presenting in outpatient department and emergency were included. History was taken and clinical examination was done, specially recording vital signs, subcutaneous bleeding or rash. Blood samples were collected for CBC, Liver function tests, Renal function tests and serology for Dengue virus IgM by ELISA done in laboratory. White blood cells below 4 per cubic mm, platelets

count less than 150 per cubic mm and hematocrit above 45% were significant findings. Serum ALTabove 40 U/L and AST above 45 U/L, serum Urea more than 40 mg/dl and creatinine above 1.5 mg/dl were taken as clinically significant. Serological test for dengue virus IgM was performed using ELIS A method and its positive value was considered as positive for dengue fever. Data was entered in a pre-designed proforma. For subsequent processing and analysis, the data was analyzed on Statistical Package for Social Sciences (SPSS) version 13. Mean and standard deviation were calculated for age. Frequency and percentages were computed for presentations of common symptoms and investigations.

Results

Three hundred patients (300) presenting with acute febrile illness were included in this study. The mean age of patients was 33.4 years (ranging from 18 to 60 years) **Table-1.** There were 62.3% females and 37.7% males **Table -2.** Distribution according to the mode of presentation is tabulated in **Table-3.**

Table-1: Age distribution of patients.

Age Groups	Number of Patients	Percentage
18 - 28	121	40.3%
28 - 38	87	29%
38 - 48	63	21%
48 - 60	29	9.7%

Table-2: Sex distribution of patients.

Gender	Number of Patients	Percentage
Male	113	37.7%
Female	187	62.3%
Total	300	100%

Table-3: Mode of presentation.

Symptoms	Number of Patients	Percentage
Headache	284	94.6%
Myalgia	271	90.3%
Fever with rigors and chills	257	85%
Vomiting	190	63.3%
Throat pain	66	22%
Rash with petechie	53	17.6%
Bleeding from main site	13	4.3%

Headache was the most common presentation in 284 (94.6%) whereas bleeding from main sites (epistaxis, bleeding from gums, haematemesis, hemoptysis, bleeding per rectum or bleeding per vaginum) was found in 13 (4.3%) patients. Investigations are presented in **Fig-1**. Leucopenia & thrombocytopenia were found in all three hundred 300 (100%) cases. Serum urea was raised in 113 (

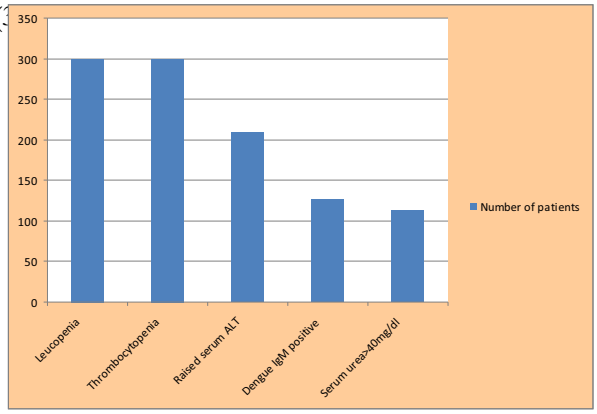

Fig-1: Investigations.

Discussion

Different modes of presentation of patients presenting with acute febrile illness along with their laboratory investigations were evaluated in this study. In a study done by Kumar and his colleagues found out that fever was the most common presentation, it was present in 462 (99.1%), followed by myalgia 301 (64.6%), vomiting 222 (47.6%), headache 222 (47.6%) and abdominal pain 175 (37.6%). The most common hemorrhagic manifestation was petechiae in 84 (67.2%) patients.[11] Similar kind of study was done in Jeddah by M. Ayub and colleagues. It showed that fever was most common presenting feature along with headache, vomiting and diarrhea.[12] According to other studies done in Pakistan there is variation in clinical presentations and laboratory investigations. Arshad et al found fever in 88 patients (83.01%) headache in 69 (65.09%) and rash in 29 (27.3%) patients out of total 106 patients.[13] But in our study most common symptom was headache. It was present in 284 (94.6%) patients. Myalgia was present in 271 (90.3%) patients, fever was found in 257(85.6%) patients and vomiting was present in 190 (63.3%) patients. But rest of the patients developed fever on third or fourth day of illness. So fever may not be the first presenting symptom in patients presenting with dengue fever cases, although it is an important symptom which may develop later on.

Other symptoms are also important in patients

In a study in India association of platelet count and serological markers of dengue infection was assessed and it was found that thrombocytopenia was more consistently associated whenever NS1 was detected compared to antibody detection (p value <0.001). So it was concluded that in cases of fever, thrombocytopenia is more consistently found in dengue positive rather than dengue negative subjects.[14] In Pakistan, Arshad et al found that thrombocytopenia and leucopenia were present in 80 (78%) and 53 (49%) patients respectively and deranged Liver function tests and Renal function tests in 62 (60%) and 25 (23%) patients respectively.[13] Similarly in another study done by Hayat and colleagues, leucopenia was present in 90 (26.4%) patients and platelets below 50,000 cells/mm^3 were present in 59 (17%) patients only.[15] In our study we also found that thrombocytopenia along with leucopenia were present in all patients presenting with acute febrile illness but platelets below 50,000 cells/ mm^3 were in 110 (36.6%) patients only. Raised Alanine aminotransferases were present in 209 (69.6%) patients while raised urea was found in 113 (37.6%) patients. So patients of suspected dengue fever must be investigated for liver function test and renal function test along with complete blood count.

Conclusion

Fever associated with chills and rigors, body aches, headache, myalgia, rashes and hemorrhagic manifestations, low platelet count, decreased WBC count and raised ALT are satisfactory and important parameters to screen for a suspected dengue virus infection in patients presenting with acute febrile illness. Young doctors dealing in emergency wards and outpatient departments must be aware of different presentations of symptoms of Dengue fever, so that early detection and better quality of treatment can be delivered. However diagnosis must be confirmed by dengue serology uing dengue specific IgM. Furthermore surveillance strategies, preventive measures and health workers education are equally critical to curtail this disease.

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