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Original Article

Retrospective Analysis of 68 Cases of Dengue Fever

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Abstract

Background: Dengue is a mosquito-borne febrile disease caused by any of the four serotypes of the dengue virus transmitted by the Aedes aegypti mosquito.
Objectives: To study the clinical manifestations and treatment practices of Dengue cases in Pakistan.
Materials and Methods: Retrospective record based analysis of dengue cases was performed in 3 general hospitals of Punjab during the 2010 outbreak. Only confirmed dengue IgM (ELISA) cases were further analyzed. WHO guidelines were used to evaluate the method of diagnosis and treatment.
Results: A total of 125 suspected dengue cases were admitted in these hospitals out of which dengue IgM was positive in 68 cases. Out of 68 cases, 60(88.2%) were of dengue fever and 8(11.8%) were dengue hemorrhage fever. Tourniquet test was not performed in any case. Sixty (88.8%) cases were males. The ages of the patients ranged from 4-60 years. Sixty five patients (96%) had fever followed by myalgia in 48(70%), headache in 33(48.8%), vomiting in 30(44.8%), weakness in 48(38.4%) and abdominal pain in 25(20%) cases. Thrombocytopenia was present in 60 cases (88.8%). In 54(43.2%) cases platelet count was below 50,000. Leucopenia was present in 45 cases (66.4%). Analgesics were prescribed in 52 cases. Fluid replacement therapy was used in 59(87.2%) which consisted of either dextrose water or ringer's lactate or normal saline. Antibiotics were prescribed in 47 cases. WHO guidelines were not followed in the diagnosis and management of these cases.
Conclusions: WHO guidelines for the diagnosis and management of dengue fever were not followed thus leading to unnecessary treatment and waste of resources.
Policy message: Training of health care providers should be done on WHO guidelines for the diagnosis and treatment of dengue fever.
Key words: Dengue, fever, dengue hemorrhage, antibiotics.

Introduction

Dengue made its debut as early as 1780, when Benjamin Rush described the condition as "break bone fever". This hitherto unfamiliar infection has now grown to demand the attention of all public health care providers.[1] The disease is caused by any of the four serotypes of dengue virus, a member of the family *Flaviviridae*. The principal vector for dengue virus is *Aedes aegypti*, a highly urbanized, daytime biting mosquito that breeds in stored water. Occasionally dengue fever may progress to more serious forms of disease, namely, the dengue hemorrhagic fever and the dengue shock syndrome, both of which can lead to death.[2] The virus affects 50-100 million people annually while dengue hemorrhagic fever cases range from 20,000 to 500,000 per year. Fatality rate can be as high as 10% and can be reduced to as low as 1% with early recognition and proper treatment. Typical dengue fever is distinguished by the abrupt onset of fever, escorted by a severe headache, retro-orbital pain, fatigue which is associated with severe myalgia and arthralgia. A macular or maculopapular rash, often confluent with the sparing of small islands of normal skin has been reported. Other signs and symptoms include flushed facies, lymphadenopathy, conjunctivae, an inflamed pharynx, and mild gastrointestinal and respiratory symptoms.[3] In Asia, dengue sprouted from Southeast Asian countries and traveled westward on its geographic trajectory.[4] Multiple outbreaks have been reported from different regions of India, Sri Lanka, Pakistan, and other Asian countries.[5] Dengue Fever outbreaks have been reported from Pakistan in 1994, 1995, and 1997. Thereafter, few sporadic cases were reported until the winter of 2006 when an outbreak occurred, followed by another from September to November in 2007 that caused significant morbidity and mortality. Evidence suggests that the overall burden of disease, as well as its severity, is on the rise in Pakistan.[2]

Dengue figures for 2010 are characterized as the highest since 2006. As many as 6,042 suspected dengue cases were handled in the out-patient departments of

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government and private hospitals and a considerable number of them were admitted for treatment during the previous year. Of them, 4,083 patients tested positive for dengue virus.

The present retrospective analysis was done to evaluate clinical manifestations and treatment of Dengue cases in our setup.

Materials and Methods

Retrospective record based analysis was done for all cases who were admitted with the provisional of dengue fever during the outbreak of 2010 in Punjab. Three hospitals were selected and only data of dengue IgM (ELISA) positive cases was further analyzed, irrespective of their age or gender.

The hospitals included Abdul Hakim Memorial Hospital, Rawalpindi, which is a private hospital (15 cases), Nishtar hospital, Multan (80 cases) and District Headquarter Hospital Chakwal (30 cases) both are public sector hospitals. Initially 125 suspected cases were included in the study whose data was entered in a performa. Apart from the routine complete blood picture, the management of fever, hydration, platelet transfusion and blood transfusions were also evaluated. The WHO guidelines for diagnosis, treatment, prevention and control of dengue (2009) were used for comparison.

Results

Out of 125 suspected cases of dengue infection, 68 were confirmed on ELISA, therefore, data of these 68 cases was further analyzed. Sixty cases had dengue fever and 8 had dengue hemorrhage fever (bleeding from gum, conjunctiva and nose). None had dengue shock syndrome. There were 60 males and 8 females. Ages of the patients ranged from 4-60 years with majority falling in 15-44 years age group (Figure-1).

The common presenting symptoms were fever in 66(96%) cases, myalgia in 48(70%), headache in 33(48.8%) and vomiting in 30(44.8%) (Figure-2). Dengue IgM (ELISA) was used for the confirmation of the disease. Tourniquet test was not done in any case. Thrombocytopenia was reported in 88.8% cases, while 54 cases had a platelet count of below 50,000 (43.2%). Leucopenia was seen in 45 cases (66.4%). Analgesic panadol was prescribed in 52 cases (76%). This could be due to some concomitant disease or infection. One case had positive blood tests for both malaria and dengue; he was treated with antimalarials along with supportive treatment of dengue. Four cases were simultaneously being treated with malaria also, although there was no supportive diagnosis. In 47 patients antibiotics were prescribed which included Cephalosporin in 35(51.2%) cases and Quinolones in 11(16.8%) cases (Figure-3).

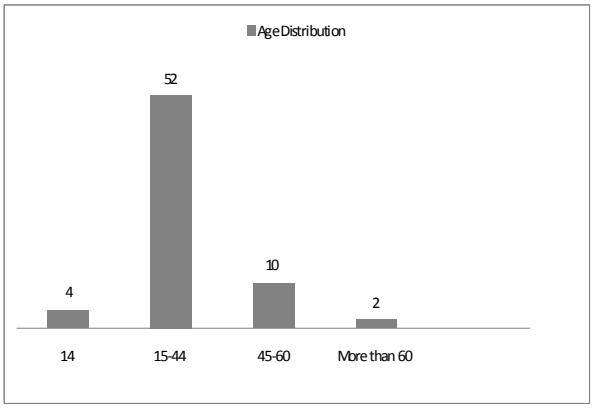


Figure 1: Age distribution of the patients.

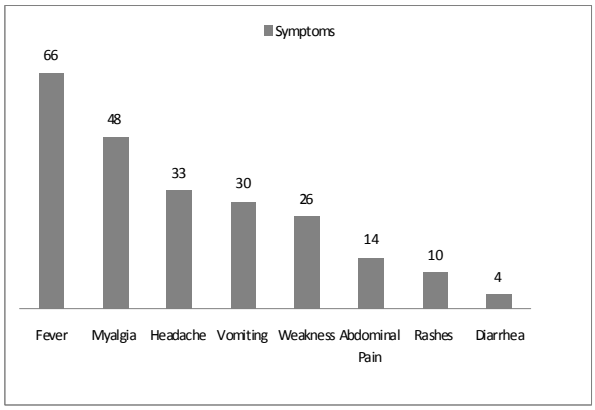


Figure 2: Symptoms found in the patients.

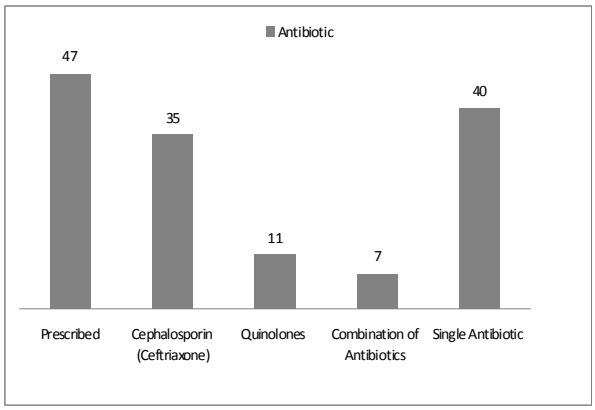
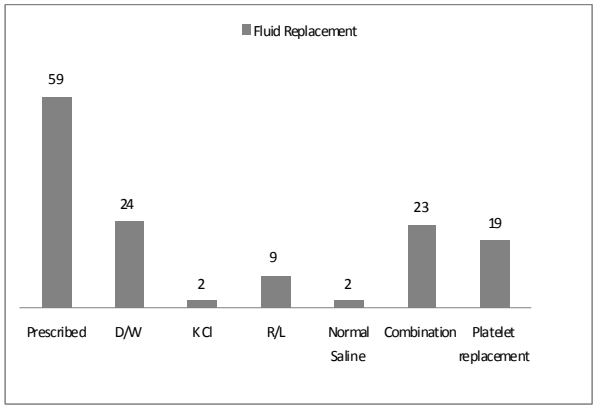


Figure 3: Antibiotics prescribed in Dengue fever.

In 7(14.9%) cases more than one antibiotic was prescribed. Fluid replacement therapy was used in 59(87.2%) cases, which included dextrose water in 24(40.4%) cases, ringer's lactate in 9(14.7%) and normal saline in 2(2.7%). In 43(39.4%) combination of rehydrating agents were used (Figure-4).



D/W=Dextrose water, KCL=Potassium Chloride, R/L=Ringer's lactate

Figure 4: Fluid replacement.

Platelets (fresh mega units) were transfused in 19(28%) cases.

Discussion

Dengue is emerging as serious health problem for Pakistan. Starting from 1994 intermittent reports of Dengue is observed throughout the country. Year 2010 witnessed mosquito-borne viral disease with 6,042 suspected dengue cases.

This study showed a male preponderance with lesser disease in extreme ages which is in agreement to the study conducted[4] that stated that a total of 278(65.7%) of 423 patients admitted to a tertiary care hospital in Karachi from January to December 2006 presented suspected dengue illness had a mean age of 31 +/- 12.9 years, with 168(60%) males and 110(40%) females. It is also cleare from this study that the presenting symptoms of fever, myalgia, vomiting and abdominal pain were similar with other studies from India and Pakistan.[1,6] Although the diagnosis of dengue fever or its complications is not very difficult but it was observed that during an outbreak most cases were diagnosed and treated on presumptions and WHO guidelines for assessment of Dengue were not followed. The same was seen in this study where only 68 cases were properly diagnosed in three major hospitals of Punjab. Rise in hematocrit and fall in platelets are the first hematological abnormalities seen in these patients. Low platelets were seen in 88.8% cases in this study, while in 43.2% cases they decreased to even $\leq$50,000/mm.[3] These values were somewhat different from a study during outbreak in Karachi in 2006 in which over all thrombocytopenia (platelet count <50,000/mm^3) occurred in 60% patients.[4] In our study we observed that according to WHO protocol, panadol was prescribed to majority of cases along with proper fluid replacement but antibiotics which have no role in its management were prescribed in 47 patients (multiple antibiotics were used in 7 patients) (12.94%). In the 2006 study platelet transfusion was used in 31% while in the present study it was used in 28%. Dengue is diagnosed on positive blood tests, and clinical symptoms but other causes of fever have to be excluded. In the present study differential diagnosis was not performed in 32.8% patients. There is no specific treatment for dengue and there is no vaccine available for its prevention. WHO has developed clear guidelines for the diagnosis and treatment of dengue which need to be followed to reduce its morbidity and mortality.

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References

1. Ashwini K, Chythra RR, Vinay P, Seema S, Cheenaveerappa B, Charmaine S. Clinical manifestations and trend of dengue cases admitted in a tertiary care hospital, Udupi district. Ind J Community Med 2010; 35: 386-90.
2. Akram Y. An outbreak of dengue fever Available at: http://blog.dawn.com/2010/10/22/an-outbreak-of-dengue-fever. [cited 2012 March 7].
3. Annelies WS, Eli S. Dengue in Travelers. N Engl J Med. 2005; 353: 924-32.
4. Khalid M, Muhammad SK, Junaid P, Muhammad T, Harith H et al. Outbreak of Dengue Fever in Karachi 2006: a clinical perspective. J Pak Med Assoc 2009; 59: 339-44.
5. Madiha S, Umme RS, Menal H, Rehan Z, Asif B. Knowledge, attitude and practices regarding fever among adults of high and low socioeconomic group. J Pak Med Assoc 2010; 60: 243-7.
6. Rizwan I, Kashif M. Dengue Fever. Pak J Med Res. 2011; 50: 42-44.