

ORIGINAL ARTICLE

OUTCOME OF DENGUE FEVER IN ADULTS

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ABSTRACT

Background: Dengue fever is a mosquito borne viral infection. Recent years have seen epidemics of this disease. It manifests in three ways, a mild atypical form, classic dengue and dengue haemorrhagic fever. This study was carried out to know the outcome of dengue fever in adults in our setup.

Material & Methods: This descriptive study was conducted in Medical A Unit Hayatabad Medical Complex Peshawar. Patients with dengue fever admitted from August 2010 to December 2010 were included. A proforma containing relevant details was filled for each patient. The diagnosis was based on clinical features and serology.

Results: Thirty-eight patients with dengue fever were studied; 23 males and 15 females. Age ranged from 18 to 60 years. Two were from Afghanistan and 36 from various parts of the Khyber Pakhtun Khwa province and adjacent tribal areas. Thirty patients had a history of travel to endemic areas. Two patients suffered from dengue haemorrhagic fever while the rest had disease without hemorrhagic manifestations. Fever was the commonest presentation 38(100%), followed by vomiting (55%), pain abdomen (50%). Pancytopenia was found in 10% patients, thrombocytopenia 50%, anaemia 45% and leukopenia in 40%. One patient from Afghanistan with dengue haemorrhagic fever died. All other patients were discharged uneventfully.

Conclusion: Dengue fever is a mild illness with favorable outcome unless the presentation is with hemorrhagic phenomena.

KEY WORDS: Dengue fever, Dengue haemorrhagic fever, Fever.

INTRODUCTION

Dengue fever is a mosquito borne viral infection. It occurred sporadically till the 19th century. Recent years have seen epidemics of this disease and presently it is endemic in 112 countries around the world.^{1,2} Dengue virus is an RNA virus of flaviridae family, with four serotypes, transmitted by the bite of *Aedes aegypti* mosquito.

It manifests in three ways, a mild atypical form, classic dengue and dengue haemorrhagic fever (DHF)³ which may evolve into dengue shock syndrome. Mortality can occur in dengue shock syndrome unless prompt and adequate management with fluid replacement is provided. An estimated 50 million dengue infections occur annually and approximately 2.5 billion people live in dengue endemic countries.⁴ Recently outbreaks of dengue fever have been recorded in Pakistan, Saudi Arabia, Sudan and Yemen, 2005-2006.⁵ In Pakistan, the first confirmed outbreak of DHF occurred in 1994. A DEN-3 epidemic with DHF was first reported in 2005. Since then, the expansion of dengue infections with increasing frequency and severity has been reported from large cities in Pakistan as far north as the North-West Frontier Province in 2008. Dengue is a reportable disease in Pakistan. A pertinent issue for this region is the need to better understand the epidemiological situation of dengue in areas that are endemic for Crimean-Congo haemorrhagic fever and co-infec-

tions of these pathogens. Changes in the epidemiology of dengue, lead to problems with the use of the existing WHO classification. Symptomatic dengue virus infections were grouped into three categories: undifferentiated fever, dengue fever (DF) and dengue haemorrhagic fever (DHF). DHF was further classified into four severity grades, with grades III and IV being defined as dengue shock syndrome (DSS).⁶ There have been many reports of difficulties in the use of this classification,⁷⁻⁹ which were summarized in a systematic literature review.¹⁰ Difficulties in applying the criteria for DHF in the clinical situation, together with the increase in clinically severe dengue cases which did not fulfill the strict criteria of DHF, led to the request for the classification to be reconsidered. Currently the classification into DF, DHF, DSS continues to be widely used.⁶ After an incubation period of 4—10 days, infection by any of the four virus serotypes can produce a wide spectrum of illness, although most infections are asymptomatic or subclinical. Primary infection is thought to induce lifelong protective immunity to the infecting serotype.¹¹ Individuals suffering an infection are protected from clinical illness with a different serotype within 2—3 months of the primary infection but with no long-term cross-protective immunity.

This study was carried out to know the outcome of dengue fever in our setup in adults.

MATERIAL AND METHODS

This descriptive study was conducted in Medical A Unit Hayatabad Medical Complex Peshawar from July 2010 to December 2010. A proforma containing relevant details was filled for each patient. The diagnosis of dengue fever was based on clinical features and serology. A total of 38 patients were studied. All patients above age 18 and with clinical features suggestive of dengue fever and anti IgM positive were included in the study. Patients with dengue IgM negative were excluded from the study irrespective of their features. Follow up where necessary was done upto one week after discharge from the hospital.

RESULTS

A total of 38 patients were studied for the outcome of dengue fever (Table-1). Age range of these patients was from 18 to 60 years. Among these 23 were males and 15 females.

Two were from Afghanistan and 36 from various parts of the Khyber Pakhtun Khwa province and nearby tribal areas.

Thirty patients had a history of travel to endemic area of the country.

Two patients suffered DHF while the rest had the disease without hemorrhagic manifestations.

Fever was the commonest presentation 38 (100%) patients, followed by headache(70%), vomiting (55%), pain abdomen (50%).

Pancytopenia was found in 10% of patients, thrombocytopenia 50%, anaemia 45% and leukopenia in 40% of cases.

One patient from Afghanistan with DHF died the rest all were discharged from the hospital uneventfully.

DISCUSSION

Dengue infection is a systemic and dynamic disease. It has a wide clinical spectrum that in-

Table 1: Outcome of patients with dengue fever.

Outcome	Number of patients	Percentage
Recovered completely	35	92.10
Expired	01	2.63
Other (Pancytopenia not resolve)	02	5.26

cludes both severe and non-severe clinical manifestations¹². After the incubation period, the illness begins abruptly and is followed by the three phases — febrile, critical and recovery. In febrile phase patients typically develop high-grade fever suddenly. This acute febrile phase usually lasts 2–7 days and is often accompanied by facial flushing, skin erythema, generalized body ache, myalgia, arthralgia and headache¹².

Fever was the presenting symptom in all of our pts(100%). Ahmed's et al¹³ have reported Fever as the main finding in their work as like all other epidemics. Average duration of fever in their study was 5 days and biphasic pattern was seen in 40% cases. Similar findings were observed in dengue epidemics in Bangladesh and Chennai.¹⁴

Wasay M¹⁵ conducted a study in which all cases presented with fever (100%) and a majority also had an accompanying viral syndrome with headache (87%) and abdominal pain (27%). Systemic haemorrhagic manifestations were observed in 54% patients including petechiae (36%), epistaxis (18%) and gastro intestinal bleeding (9%). A total of 217(97%) patients recovered fully by the time of discharge and had no sequelae at one week of follow up. Six patients (2.6%) expired. In our study one patient died (2.63%), 35 recovered completely (92.10 %) and two had pancytopenia (5.26 %) which did not recover after a week.

Rahim et al¹⁶ has shown in his study that Almost all of the patients presented with fever (100%), headache 98.2%), bodyache (97.7%), and the vast majority had skin rash (78.5%), backache (78.2%) and retro-orbital pain (79.7%). Both anti-dengue IgG and anti-dengue IgM were positive in 55.1% of patients and either anti-dengue IgG or anti-dengue IgM was positive in 23.6% and 21.3% of patients respectively. Management outcome of the patients was quite satisfactory without any case fatality.

In our study body aches were reported by 34 patients (89.47%) and headache by 30 (78.94%).

Some patients may have sore throat, injected pharynx and conjunctival injection. Anorexia, nausea and vomiting are common. Rahim found anorexia (100%) and nausea (100%) in all his patients while we found vomiting in 55% of our patients.

In this disease the liver is often enlarged and tender after a few days of fever.¹⁷ Contrary to this only 3(7.89%) of our patients had hepatomegaly and two(5.26%) had splenomegaly. Most of our

patients presented too early for the liver to be palpable. Similarly Ahmed S et al found Hepatomegaly in 13 (37%) cases and Splenomegaly in 2 (6%) patients in their series¹³. Due to the difference in age group from our patients, the number of patients with liver enlargement in their study were more. pancytopenia was found in 10% of patients, thrombocytopenia in 50%, anemia in 45% and leukopenia in 40 % of our cases while Rahim et al in his study showed that almost all of the patients (97.7%) developed thrombocytopenia but only 4.1% developed leucopenia at sometime during the course of the disease and anaemia was found in 49.4% of the patients. Correlating to our study Ahmed S et al observed Anemia in 20 (57%) patients.

Mild haemorrhagic manifestations like petechiae and mucosal membrane bleeding (e.g. nose and gums) may be seen^{17,18}. The earliest abnormality in the full blood count is a progressive decrease in total white cell count, which should alert the physician to a high probability of dengue. Coryza is reported to be a common manifestation in young children, however, in the study of Ahmed S et al it was exceedingly uncommon compared to other clinical features. We observed runny nose in five (13.15%) patients which correlates to the study of Ahmed S et al despite the fact that most of their patients were children.

History of pain abdomen was found in 50% of our patients. Abdominal pain, vomiting, bleeding, headache and arthralgia constituted common clinical manifestations in the study of Ahmed S et al. These were also found to be common presenting features in previous epidemics in Karachi.²

Ahmed et al observed rashes in 65% children. Forty percent had petechiae and bruises, 26% had maculopapular rashes (mainly on face and extremities) and 8.5% had confluent red macular rashes involving both legs. They also observed spontaneous haemorrhage in 87% children in the form of gastrointestinal haemorrhage and 61% of their patients presented with epistaxis while we observed epistaxis in 5.26 % of our patients. The reasons of this gross difference could not be known.

CONCLUSION

Dengue fever is a mild illness with favorable outcome unless the presentation is with hemorrhagic phenomena. Fever is the commonest symptom followed by headache, vomiting and abdominal pains. Further studies on the outcome specifically of dengue hemorrhagic fever need to be conducted to understand the complications of disease in further details in our setup.

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Beautiful view of historic Mahabat Khan Mosque at Peshawar