Dengue Deaths: a clinical experience in critical unit

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ABSTRACT

Aim: To evaluate the clinical features, complications and outcome of patients with Dengue fever..
Study Design: This was an Observational study.
Period: In epidemic of dengue fever from September 2011 to 31 October 2011
Setting: This study was carried out at Medical ICU Ittefaq hospital Modal town Lahore.
Inclusion criteria: All patients with acute febrile illness with low TLC count, low platelets count and anti- Dengue IgM and IgG positive which were admitted to ICU with complications
Exclusion criteria: 1: All patient with acute febrile illness with low blood count but negative antibodies serology. 2: All patients with co morbidities like diabetes, chronic liver disease, chronic renal failure
Methods: All patients above 12 years of age with acute febrile illness due to Dengue fever were observed for complications and statistical analysis was done on SPSS 11 programme.
Results: Out of 128 patients 122(95.31%) patient were in shock and 6(4.68%) were unconscious dengue leakage shock 6(4.9%) and 2(1.6%) cases were in dengue hemorrhagic shock cardiac shock was noted in 24(19.67%) cases and 94(77%) cases were in hypovolemic shock. Out of 24(19.67%) cases of myocarditis 20patients expired despite all cardiac support and 4 cases recovered over period of two weeks. All patients of simple hypovolemic shock due to vomiting or poor oral intake were excellent managed with crystalline fluid. Six (4.68%) cases were having dengue encephalitis confirmed on CSF examination and MRI brain. One unusual observation was that patients were having bilateral thalamic and bilateral basal ganglia infarction which is unusual site for viral encephalitis
Conclusion: Dengue myocarditis ,dengu encephalitis and dengue multiorgan failure are major killer in dengue fever not Dengue shock syndrome or Dengue hemorrhagic shock and coagulopathy in dengue fever is independent of platelets count.
Keywords: Dengue fever, IgG, IgM, hypovolemic shock

INTRODUCTION

Dengue infection (DI) is amongst the most important emerging viral diseases transmitted by mosquitoes to humans, in terms of both illness and death.[1,2]Overpopulation has consequently led to poor sanitary conditions and water logging at various places. A major epidemic of DHF from Delhi was last reported in the year 1996 after which DI became a notifiable disease and a number of policies were formulated to bring the DI as well as its vector under control[3,4].

Although, the vector mainly responsible for the spread of DI is present all the year around in Delhi, studies on the relative prevalence and distribution have shown the highest *A. aegypti* larval indices during the monsoon and post monsoon period[5]. Rain, temperature and relative humidity are suggested as important factors attributing towards the growth and dispersion of this vector and potential of dengue outbreaks[6]. A large epidemic in September 2011 in Pakistan had lead to many deaths. Dengue

hemorrhagic shock was major threat of death. All literature flooded with management of this type of shock .but we are witness many deaths from other types of complications about which literature is silent.Rather we say DHS was not major killer than other worst complications[7,8].

PATIENTS AND METHODS

This observational study was carried out in Medical ICU Ittefaq Hospital Modal town Lahore from September 2011 to 31october 2011. All patients with acute febrile illness with low TLC count, low platelets count and Anti- Dengue IgM and IgG positive which were admitted to ICU with complications were included in the study. All patients with acute febrile illness with low blood count but negative antibodies serology and with co morbidities like diabetes, chronic liver disease, chronic renal failure were excluded from the study.

All patients with age above 12 years, who were either hospitalized or treated in medical outdoor clinic due to acute febrile illness in epidemic of dengue an were shifted to medical ICU for worsening clinical status OR directly admitted to Medical ICU were

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evaluated for clinical features of Dengue Fever (DF), Dengue haemorrhagic fever (DHF) and Dengue Shock Syndrome (DSS). Patients showing typical clinical features and haematological findings suggestive of Dengue fever (As per WHO criteria) were evaluated indetail for comparison of probable and confirmed cases of Dengue fever. All other cases of acute febrileillness, not showing clinical features or haematological abnormalities of Dengue fever, were excluded. The clinical and laboratory features were recorded on SPSS 11.0 programme and graded where required, for descriptive and statistical analysis.

RESULTS

Out of 128 patients with febrile illness admitted in Dengue Wards shifted to ICU because ofComplications of dengue fever in form of shock, unconsciousness and multiorgans failure. 122(95.31%) patient were in shock and 6(4.68%) were unconsciousdengue leakage shock 6(4.9%) and 2(1.6%) cases were in dengue hemorrhagic shock cardiac shock was noted in24(19.67%) cases and 94(77%) cases were in hypovolemic shock All patients of dengue leakage shock developing ascites and pleural effusion over short period of time recovered with giving plasma expander and normal saline, while patients of dengue myocarditis (cardiac shock) confirmed on echocardiography and cardiac enzyme were difficult to manage. Out of 24(19.67%) cases of myocarditis20patients expired despite all cardiac support and 4 cases recovered over period of two weeks. Two cases were in Dengue Hemorrhagic shock and platelets of one case was eighty thousands who expired because of bleeding from nose and intracranial hemorrhage and other patient was having platelets counts even thousands and minor bleed from nose.This patient recovered with conservative management. Two patients were in multiorgans failure in form of renal failure, hepatic failure and bilateral pneumonia. Both patients expired. All patients of simple hypovolemic shock due to vomiting or poor oral intake were excellent managed with crystalline fluid. Six (4.68%) cases were having dengue encephalitis confirmed on CSF examination and MRI brain. One unusual observation was that patients were having bilateral thalamic and bilateral basal ganglia infarction which is unusual site for viral encephalitis. All patients expired with this presentation.

DISCUSSION

This observational study highlighted mode of death in dengue fever. Most fear in epidemic was low plateletscount but our study showed bleeding was independent of platelets count and one death with intracranial hemorrhage may be due some preexisting pathology in brain like AV malformation[9,10].Most of deaths were dueto dengue myocarditis about which our literature is silent[9,10,11]. Injudicious use of I/V fluids in underlying dengueMyocarditis led to deterioration of clinical status and deaths. This needs to be stressed in medicalCommunity. Other major cause of deaths was dengue encephalitis with involvement of atypical sites in brain and 100% mortality[12,13,14]. This was not addressed properly in this epidemic. Hypovolemic shock was majormorbidity but with effective management with zero% mortality. This hypervolemia was secondary toAnorexia, vomiting and high grade fever and effectively managed with I/V fluids, while dengue leakageshock and dengue hemorrhagic shock were rare. Only few cases were reported withthese types of shock no death[15].So it was not major cause of mortality as previous being stressed.

CONCLUSION

Dengue myocarditis dengue encephalitis and dengue multiorgan failure are major killer in dengue fever not Dengue shock syndrome or Dengue hemorrhagic shock and coagulopathy in dengue fever is independent of platelets count

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