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Clinical presentation of Dengue in a general hospital in Bangladesh

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ABSTRACT:

Dengue is one of the commonest viral diseases of Africa and tropical Asia. This disease is characterized by headache, fever, generalized body pain, severe malaise and back pain. The uncomplicated Dengue which is also named the classical dengue fever usually begins 3-8 days after biting of an infected mosquito. This is a cross sectional study on clinical presentation of Dengue in a general hospital in Bangladesh. The total number of patients was 198. The study period was 6 months (July 2004 to December 2004). All the patients who were admitted in the 'Dengue ward' and diagnosed as Dengue by serological test were included in this study. The aim of this study was to evaluate the common clinical presentations of Dengue in a General hospital in Bangladesh. The aim and objective was to compare the clinical presentations of Dengue in Bangladesh patients with those of other international studies. Most of the patients were male (3.7 :1) in sex and young adult(s) in age (80.3%). Fever and severe backache were the commonest clinical features. Nearly two-third (74%) patients presented with hemorrhagic features. Gum bleeding (20.2%) was the commonest bleeding feature. The result of this study showed a similarity with that of other international studies.

Key words: dengue, clinical presentation, general hospital in Bangladesh.

INTRODUCTION

Dengue shock syndrome (DSS) / Dengue hemorrhagic fever (DHF) has become the most important arthropod borne disease of the world in last few decades[1-3]. During this time period the frequency of this disease has increased significantly, few new areas have become hyper endemic. Moreover Dengue hemorrhagic fever has been detected in new geographical areas with higher incidence. According to the

statistics nearly 100 million of new dengue fever patients detected annually. The disease has expanded to North, Central and South America, Australia, China and Africa during the 1980s. It is expected that this *Aedes aegypti* infested disease will continue to expand in other regions of the world. Dengue types 1-4 are the four single-strand positive –polarity antigenically distinct RNA viruses which are responsible for the transmission and pathogenesis of the disease. These viruses belong to the family *Flavivirdae*[4].
Dengue viruses have been detected transmitting between tree-hole breeding mosquitoes and non-human primates in some countries of West Africa and Asia[5].

This disease is characterized by headache, fever, generalized body pain, severe malaise and back pain. The uncomplicated Dengue which is also named the classical dengue fever usually begins 3-8 days after biting of an infected mosquito. Improvement is achieved after few days but the fever reappears along with measles like rashes, generalized lymphadenopathy and occasionally minor hemorrhagic manifestation.
Fatalities are rare and disease usually resolves within two weeks. Residual features like prolonged convalescence or depression and weakness are not uncommon. This disease is self-limited, so knowing about the pathogenesis of the classical dengue fever is challenging. High titers of viral load in blood confirm the disease in the early phase. The mononuclear phagocytes are mostly the principal target cells for the predominantly lymphotropic virus. This fact is assumed to have great relevance in the pathogenesis of dengue hemorrhagic fever (DHF) or dengue shock syndrome (DSS)[6].

It is suggested that dengue has a big range of clinical presentations which mostly determined by the severity of the disease and age of the patient[7].

When affected by any of the four dengue stereotypes, the patient may diagnose the typical dengue fever (DF) or the more serious side-effects, like dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS)[8]. Patients can be diagnosed with this disease in their early stages by testing the serum for non-structural protein (NSI) antigen[9]. The symptoms of the diseases began shortly after the incubation period, and the patient goes through three stages; febrile, critical and recovery. DF is most commonly seen in adults and adolescents, and can bring either only mild fever, or a more incapacitating disease, such as a sudden high fever, severe headache, retro-orbital pain, myalgia, arthralgia and rash. These syndromes happen commonly during the early febrile phase. In the critical stage, the skin shows the effect of a petechial rash, which often develops on days 3-7, during defervescence. It is linked with capillary leakage and haemorrhage[10]

Children younger than 15 years are generally found with severe dengue or DHF, whereas it can also develop in adults[7]. DHF is indicated by a temporary increase in vascular permeability which leads to plasma leakage. Some of its side-effects are high fever, bleeding, thrombocytopenia and haemoconcentration, which can

result in shock (frequently called dengue shock syndrome). Nevertheless, it can be hard to classify DHF from DF and other illnesses like typhoid fever, especially around the early stages of the disease[11].

The World Health Organization (WHO) has classified (2009) dengue fever according to the different levels of severity of the disease[10]. Different levels of severities are dengue without warning signs, dengue with warning signs and severe dengue. The warnings signs are mucosal bleeding, lethargy, abdominal pain, persistent vomiting, fluid accumulation, liver enlargement, increasing haematocrit with decreasing platelets. Severe dengue is diagnosed when accompanied with dengue with severe plasma leakage, severe bleeding, or organ failure. Recovering patients are of non-severe type. On the other hand, deteriorating dengue cases are likely to develop warning signs. Further deterioration is considered as severe dengue for which timely and appropriate intervention is required[10].

Dengue was detected sporadically in Bangladesh since 1964 though the largest epidemic was in 2000. The clinicians of Bangladesh were able to diagnose the dengue from its first year of appearance successfully but some factors were suggestive of future dengue hemorrhagic fever epidemics. These factors were climatic, socio-demographic, lifestyle and stoppage of dichlorodiphenyltrichloroethane (DDT) using[12].

The aim of this study was to evaluate the common clinical presentations of Dengue in a General hospital in Bangladesh. The aim and objective was to compare the clinical presentations of Dengue of Bangladesh patients with those of other international studies.

MATERIALS AND METHODS

This cross sectional study was conducted from July 2004 to December 2004 in Shaheed Suhrawardy Hospital in Dhaka, Bangladesh. All the patients who were admitted in the 'Dengue ward' of this hospital and diagnosed as dengue by serological test (IgM antibody and (or) NS-1 antigen) were included in this study. The total number of patients was 198. The patients who did not give consent for the study were excluded. Ethical approval was granted from the research ethical committee of the hospital (No./S.S.H./Admin/27). Informed consents were taken from all the participants. Participant's safety and confidentiality were maintained according GCP ICH6 guidelines. Data were collected by the primary investigator. Individual patient data were collected from history, physical examination, investigation results and patients chart. Data were transferred to excel spreadsheets. Then data were analyzed and tabulated.

RESULTS

More than two thirds of the patients were male. Less than one third were female. Male female ratio was 3.7 : 1 (Table 1).

Table 1: Distribution according to sex (n=198)

Sex	No.	Percentage	Ratio
Male	156	78.8	3.7 : 1
Female	42	21.2	
Total	198	100%	

Highest number of the patients was found to be young adults in the 19 to 45 age group. They represented four-fifth (80.3%) of the whole series. Nearly one sixth (16.67%) patients were in 18 years and below age group. Only 3% of patients represented the middle age (46 year to 65 year) group, whereas there was none in the older (more than 65 year) age group (Table 2).

Table 2: Distribution according to age frequency (n=198)

Age frequency (year)	No. of patients	Percentage	Average age (Years)
18 and below	33	16.67	
19 – 45	159	80.30	32.22
46 – 65	6	3.03	
66 and above	0	0.00	
Total	198		

Average hospital stay of the patients was 4 days. Standard deviation was 1.58 days (Table 3)

Table 3: Duration of hospital stay by the patients (n=198)

Averages	In days
Mean	4.05
Median	4.00
Mode	4.00
Standard deviation	1.58

Nearly all patients presented with fever. Severe headache was the next common clinical feature. Nearly 88% patients presented with body ache. Three quarter (74%) patients had hemorrhagic signs less than one third (29%) patients presented with vomiting. About one sixth of the patients' presenting features were

abdominal pain (17%) and fluid leakage (15%) (ascites/pleural effusion). Less than one sixth (15%) of the patients had loose motion or others (Table 4)

Table 4: Clinical features of patients (n=198)

	Clinical features	No. of patients	Percentage
1	Fever	196	99
2	Severe headache	189	96
3	Body ache	174	88
4	Haemorrhagic signs	147	74
5	Vomiting	57	29
6	Abdominal pain	33	17
7	Nausea	29	15
8	Fluid leakages (Ascites, pleural effusion)	31	15
9	Loose motion	17	9
10	Others (Cough, anorexia, dizziness etc.)	13	6

Three forth of the patients had bleeding manifestation. Most common bleeding presentation was gum bleeding (21.20%) followed by petechiae (18.20%). Melena was presenting feature for 15.20% of patients. Other hemorrhagic features were hemoptysis (7%), subconjuctival hemorrhage (4.5%), hematemesis (3%), epistaxis, haematuria and vaginal bleeding (1.5%) respectively (Table 5).

Table 5: Distribution according to haemorrhagic manifestations

Site of bleeding	Frequency	Percentage
Absent	51	25.8
Epistaxis	3	1.50
Gum bleeding	41	21.20
Haematuria	4	1.50
Hematemesis	6	3.00
Haemoptysis	15	7.00
Malena	29	15.20
Petechiae	37	18.20
Subconjunctival haemorrhage	9	4.50
Vaginal bleeding	3	1.50
Total	198	

DISCUSSION

In this study, predominance of male dengue patients were more than female patients and are consistent with the reports of Nivedita Gupta et al (2012)[13]. Ratageri VH et al (2005) have found that male and female patient's ratio is the same[14].

This result showed adults suffered more in dengue fever. This finding is agreed with other studies[15].

Average hospital stay was 4 days in this study and this was consistent with the result of other researchers[15].

Common presentations in this study were fever, headache, body ache, abdominal pain, nausea. Fluid leakage and loose motion were least common. Other researchers have shown the similar presentations along with retro bulbar pain and cough[13,16]. Again Daniel et al (2005) had found the similar presentations also skin rash, pruritus and sore throat.[15]. There results were similar with other studies which have shown that clinical presentations of dengue are fever, vomiting, abdominal pain, headache and also hepatomegaly[14]. Thomas et al (2014) have found the similar presenting symptoms along with loss of appetite, altered taste, retro orbital pain and rashes[17]. Other researchers have shown similar presentations and also hepatomegaly and fatigue[18]. The reporters have been suggested that hepatomegaly was more common in children than adults[18].

Three quarter (74%) of the patients had hemorrhagic signs in this study. Most common bleeding manifestations were gum bleeding, petechae, melena, hemoptysis, subconjunctival hemorrhage. Less common manifestations were hematemesis, epistaxis, hematuria and vaginal bleeding in case of female patients. These results are consistent with the reports of other studies[13, 14].

On the whole, there was fair similarity between this and other's studies. Clinical features are nearly the same in frequency in all part of the world. As clinical features are the key for the diagnosis of the disease, so early diagnosis may lead to a better management plan and improve overall prognosis.

CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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