Clinical Profile of Paediatric Dengue Cases in a Tertiary Centre Hospital: A Retrospective Study

Alok Kumar M.K.*, SanthoshVeerabhadraih**, Balaji M.D.***

Abstract

Background & Objective: Dengue fever is an acute febrile illness caused by 4 closely related viral serotypes of the genus Flavivirus. Dengue has a broad range of clinical manifestations. So this study has been done to see the wide range of clinical presentation of dengue fever in a resource limited country like India. *Materials & Methods:* It is a retrospective study done in tertiary care teaching and referral hospital over the period of 8 months. Study was done by collecting the previous records from hospital record section. There were 48 cases of serologically confirmed cases of dengue which satisfied the inclusion & exclusion criteria were included in the study. *Results:* In our study there were 52% of the cases of dengue fever, 16.6% of cases of dengue fever with warning signs & remaining 31.4 % of patients were belong to severe dengue. The common Clinical symptoms at admission were fever (100%), vomiting (77%), respiratory distress(56.25%), generalised weakness (54.1%) & pain abdomen (33.3%). Less common symptoms were loose stools (6.25%), periorbital puffiness (6.25%), altered sensorium (4.1%), oliguria (2%) & bleeding manifestations (2%). *Conclusion:* In our study atypical presentations like respiratory distress, loose stools, meningeal signs were commonly noted & bleeding manifestation at admission was rare in our study. Be aware of atypical presentation of dengue & early diagnosis & initiation of treatment for better outcome.

Keywords: Dengue Fever; Clinical Profile; Atypical Presentation; Warning Signs.

Introduction

Dengue is the most rapidly spreading mosquito-borne viral disease in the world. In the last 50 years, incidence has increased 30-fold with increasing geographic expansion to new countries and, in the present decade, from urban to rural settings. India alone accounts for almost 34 % of global dengue burden [1].

Dengue fever is an acute febrile illness caused by 4 closely related viral serotypes of the genus Flavivirus.

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Dengue virus is a single stranded RNA virus having four serotypes 1, 2, 3 & 4. Dengue virus is transmitted by the bite of infected female AedesEgypti mosquito [2].

Classical dengue fever is characterized by fever, headache, retroorbital pain, myalgia, nausea, vomiting, & often rash. More severe form of dengue is characterized by decline in fever, haemorrhagic manifestations, haemoconcentration, severe abdominal pain, protracted vomiting, hypotension & shock. Dengue illness is characterized by three distinct phases like febrile phase, critical phase & recovery phase [2,3].

Dengue has a broad range of clinical manifestations & often with unpredictable clinical presentation. So this study has been done to see the wide range of clinical presentation of dengue.

Aims & Objectives

➤ To study the spectrum of clinical presentation of dengue.

➤ To study the atypical manifestations.

Materials & Methods

It is a retrospective cross sectional hospital based study done in a tertiary care teaching hospital during the period of 8 months from October 2015 to May 2016. All serologically confirmed cases of dengue fever from 0 to 14 years of age were included in the criteria. Dengue with co-infections & children having major co morbid conditions which affect the outcome like major congenital malformations, surgeries were excluded from study.

Study was done by collecting the previous records from hospital record section. There were 48 cases of serologically confirmed cases of dengue which satisfied the inclusion & exclusion criteria were included in the study. The parameters which were studied are age, sex, place, duration of symptoms before hospitalisation, examination findings at admission. Lab analysis included were Hb, HCT, total count, platelet count, serology of dengue, ultrasound abdomen & thorax, chest X-ray & relevant other investigations which were done to rule out other causes. Patients were managed according to WHO guidelines.

Statistical analysis was done using SPSS software, 11.0. Trial version. Data were tabulated in Microsoft excel later analysed using SPSS. Chi – square test was applied for qualitative data & student t – test for quantitative data. P <0.05 was considered statistically significant.
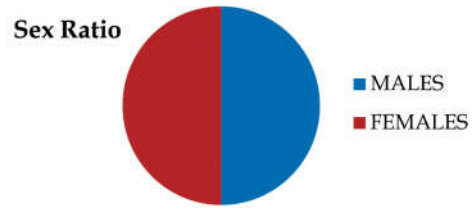

Fig. 1: Sex ratio

Results

A total of 48 cases of dengue were studied during the study period among these 50 % were male & 50 % were female.

Cases were categorized into different age groups. Less than one year constituted 16.6%, one to five year 16.6%, five to ten year 43.75% & 10 to 14 years constituted 22.9 % of cases.

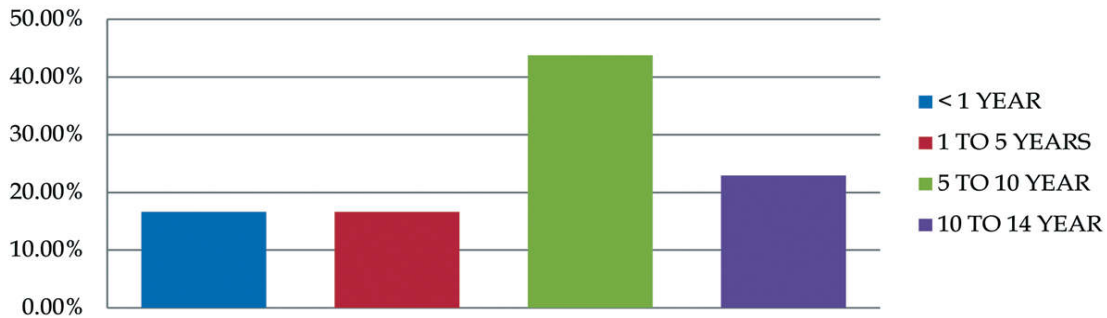The common Clinical symptoms at admission were fever (100%), vomiting (77%), respiratory distress
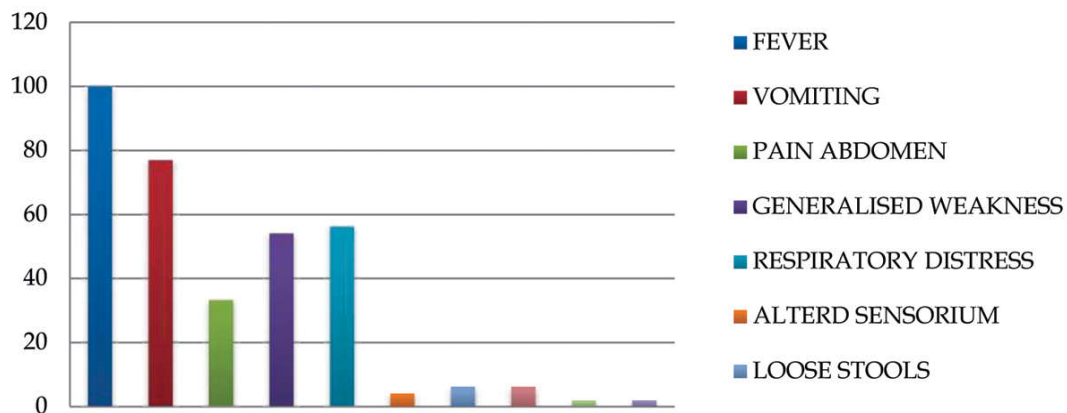

Fig. 2: Age wise distribution of cases

Fig. 3: Presenting symptoms

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(56.25%), generalised weakness (54.1%) & pain abdomen (33.3%). Less common symptoms were loose stools (6.25%), periorbital puffiness (6.25%), altered sensorium (4.1%), oliguria (2%) & bleeding manifestations (2%).
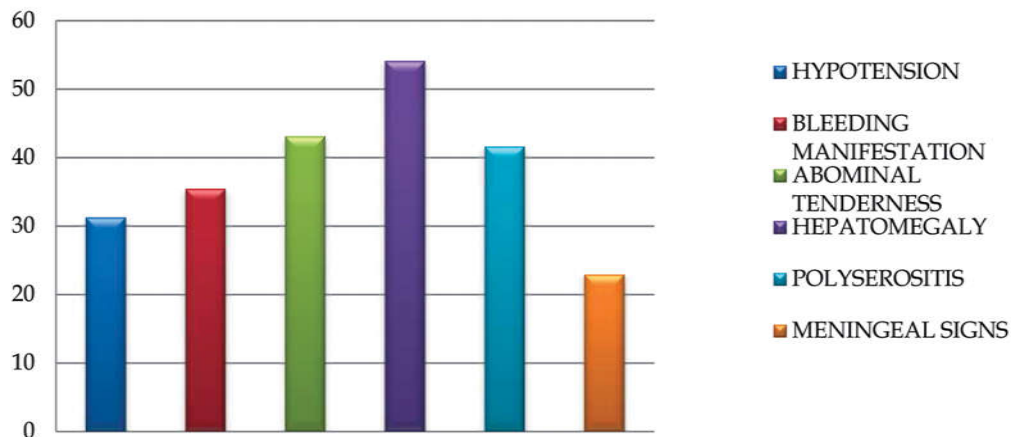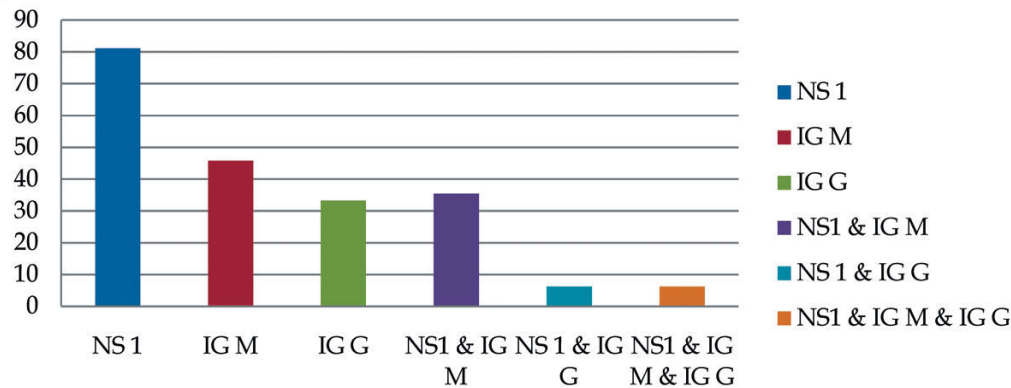

Fig. 4: Clinical signs

Fig. 5: Dengue serology interpretation

On examination of children clinical signs noted were hypotension (31.25%), bleeding manifestation in the form of mucosal & skin bleeds (35.41%), abdominal tenderness (43.1%), hepatomegaly (54.1%), polyserositis (41.6%), & meningeal signs (22.9%).

Diagnosis of dengue was made by using ELISA technique, NS1, IG G, & IG M. NS1 (81.2%), IG M (45.8%) & IG G(33.3%) individually were found positive. NSI & IG M (35.4%), IG M & IG G (8.33%), NS1, IG M & IG G (6.25%) in combination were found positive.

Children were categorized according to WHO criteria into dengue fever, dengue fever with warning signs & severe dengue.

Ultrasound was done to see for polyserosits in these children. SGPT levels were done at admission & repeated when child deteriorated. Out of 48 children one child went into acute fulminant hepatic failure with significant elevated liver enzymes more than 3000.
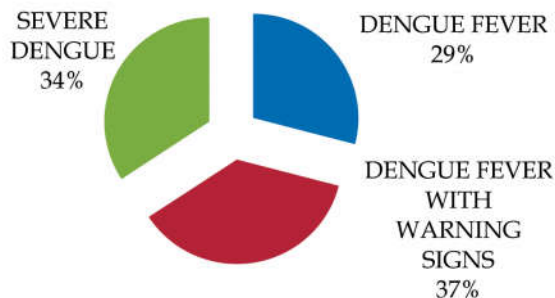
Discussion

In our study 52% of the cases were dengue fever, 16.6% of cases were dengue fever with warning signs & remaining 31.4% of patients were belong to severe dengue.

Fig. 6: Distribution of dengue cases

Average duration of fever noticed in our study was 5 ± 2.5 days it is in correlation with the study done by Nimmagadda S et. al(5.64d) [4]. Fever was the major presenting complaints (100%) in our study which is correlating with the majority of the earlier studies like Patil. G. et. al(98.6%) [5], Jakribekku R.T. et. al(100%) [6].

Vomiting is the next common presentation in our study (77%), which is not correlating with the study done by Mallhi et. al (55.2%) [7] & Jakribettu. R.P. et. al (42.03%) [6]. Respiratory distress was the next common presentation (56.25%) in our study which is higher than in other study done by Mallhi. et. al(17.7%) [7].

Generalised weakness & myalgia was the presenting manifestation in 54.1% of children which is in similar with study done by Nimmagadda. S. et. al (54.6%) [4]. other studies like Mallhi. et. al.(72.4%) [7] did not have similar findings with our study.

Pain abdomen was the presenting symptom (33.3%) of cases which is not in correlation to the earlier studies Nimmagadda et. al (41.3%) [4], Mallhi. et. al(44.8%) [7].

Clinical Manifestation & Lab Values of Dengue Cases at Admission to Hospital (P <0.05 significant)			
Blood pressure	**Normotension (68.8%)**	**Hypotension (31.3%)**	**P = 0.727**
Bleeding manifestation	Absent (64.6%)	Present (35.4%)	P = 0.75
Abdominal tenderness	Absent (56.3%)	Present (43.8%)	P = 0.04
Hepatomegely	Absent (45.8%)	Present (54.2%)	P = 0.06
Polyserositis	Absent (58.3%)	Present (41.7%)	P = 0.04
Meningeal signs	Absent (77.1%)	Present (22.9%)	P = 0.07
Respiratory distress	Absent (43.75%)	Present (56.25%)	P = 0.03
Vomiting	Absent (30%)	Present (70%)	P = 0.01
IG M	Absent (54.2%)	Present (45.8%)	P = 0.65
IG G	Absent (66.7%)	Present (33.3%)	P = 0.05

Atypical presentation of dengue in our studies were loose stools (6.25%), periorbital puffiness (6.25%), bleeding manifestation(2%), oliguria (2%). Common atypical presentation noted in other studies include hepatitis, diarrhoea, renal failure, myocarditis, encephalitis, atrial fibrillation (Nimmagadda S.et. al & Gulati. S et. al) [4,11].

Polyserositis was seen in ultrasonogram in the form of ascitis and pleural effusion in 41.7% which was statistically significant. Liver enzymes SGPT significantly elevated at admission with mean of 111.5 ±15.9. in most of the cases but 2% of children had acute fulminant hepatic failure with raised SGPT levels 3000. Cause may be due to direct effect of dengue viral infection along with ischemic hepatitis due to hypo perfusion to liver. 56.2 % of children in our study had more than 3 fold rise in liver enzyme level which is in correlation to study done by Nimmagowda S. et. al (58.7%) [4] and Kamath R.S. et. al (36.6%) [13].

Conclusion

In our study atypical presentations like respiratory distress, loose stools meningitis, were commonly noted & bleeding manifestation at admission was rare in our study. Hepatopathy and polyseroisitis were also seen among significant number of cases. Our study highlights atypical presentation of dengue infection especially in a resource limited country like India where clinicians should be aware of these manifestations so that early suspicion and appropriate intervention for better outcome of children.

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