INTERNATIONAL JOURNAL OF PAEDIATRICS AND GERIATRICS

Dr. Bopanna KM
Associate Professor,
Department of Paediatrics,
Akash Institute of Medical
Sciences Devanahalli,
Bangalore, Karnataka, India

Assessment of cases of Pediatric dengue fever in tertiary care hospital

Dr. Bopanna KM

DOI: https://doi.org/10.33545/26643685.2021.v4.i1a.123

Abstract
Background: Dengue is the most rapidly spreading mosquito-borne viral disease in the world. The present study was conducted to assess cases of dengue fever in Pediatric population.
Materials & Methods: 52 confirmed cases of dengue of both genders were studied. Haemoglobin, haematocrit and platelet count was recorded.
Results: Out of 52 patients, boys were 32 and girls were 20. Common symptoms were fever in 52, vomiting in 40, respiratory distress in 26, pain abdomen in 45, loose stools in 15 and peri- orbital puffiness in 12 cases. The mean hemoglobin level at admission was 12.1 gm% and at discharge was 12.4 gm%. The mean TLC was 56240 cumm of blood at admission and at discharge was 122452 cumm of blood. The difference was significant ($P<0.05$).
Conclusion: Common symptoms were fever, vomiting, respiratory distress and pain abdomen.

Keywords: dengue, children, respiratory distress

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 [1]. Dengue has become a major international public health concern and is now endemic in more than 100 tropical and subtropical countries. The World Health Organization (WHO) estimates that there may be 50 million dengue infections worldwide every year. India alone accounts for almost 34 % of global dengue burden [2].

The first dengue fever in India was reported during 1956 from Vellore and the first dengue haemorrhagic fever occurred in Calcutta in 1963. In India the annual incidence is estimated to be 7.5 to 32.5 million [3]. In Odisha, a state of Eastern India, the first outbreak was reported in 2010, followed by extensive outbreaks in 2011, affecting a large number of people. According to the WHO the case fatality rate for dengue is roughly 5%. Aedes albopictus was found to be the most abundant vector in the areas surveyed, followed by Aedes aegypti. DENV-2 is the prevailing serotype [4]. The case fatality rate in patients with severe dengue infection which consists of dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS) can be as high as 44%. If intervention occurs early, mortality is less than 1%. Dengue fever presents as common viral fever which causes dangerous complications. Dengue reinfection is observed to be more severe in children due to immunological phenomenon [5]. The present study was conducted to assess cases of dengue fever in Pediatric population.

Materials & Methods

The present study comprised of 52 confirmed cases of dengue of both genders. All were included in the study after obtaining their written consent.
Data such as name, age, gender etc. was recorded. A thorough clinical examination was performed. Haemoglobin, haematocrit, platelet count, serology of dengue, ultrasound abdomen and thorax, chest x-ray, duration of hospital stay and outcome was recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Corresponding Author:
Dr. Bopanna KM
Associate Professor,
Department of Paediatrics,
Akash Institute of Medical
Sciences Devanahalli,
Bangalore, Karnataka, India

Results

Table 1: Distribution of patients

Total- 52		
Gender	**Boys**	**Girls**
Number	32	20

Table I shows that out of 52 patients, boys were 32 and girls were 20.

Table 2: Clinical symptoms in patients

Symptoms	Number	P value
Fever	52	
Vomiting	40	
Respiratory distress	26	0.05
Pain abdomen	45	
Loose stools	15	
Peri- orbital puffiness	12	

Table II, graph I shows that common symptoms were fever in 52, vomiting in 40, respiratory distress in 26, pain abdomen in 45, loose stools in 15 and peri- orbital puffiness in 12 cases. The difference was significant ($P<0.05$).
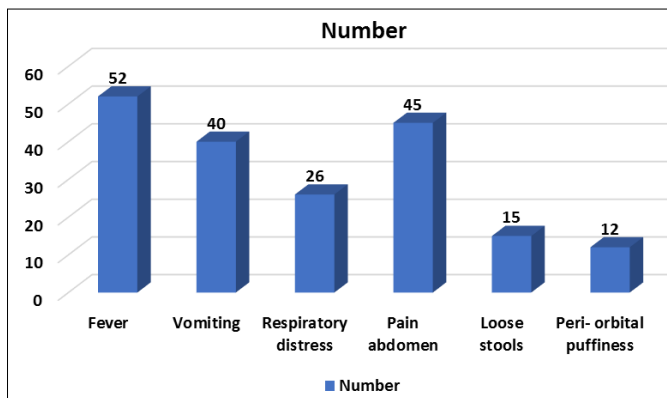
Graph 1: Clinical symptoms in patients

Table 3: Laboratory parameters

Parameters	Admission	Discharge	P value
Hemoglobin (gm%)	12.1	12.4	0.12
TLC (Cumm)	56240	122452	0.01

Table III shows that mean hemoglobin level at admission was 12.1 gm% and at discharge was 12.4 gm%. The mean TLC was 56240 cumm of blood at admission and at discharge was 122452 cumm of blood. The difference was significant ($P<0.05$).

Discussion

Dengue is an important arboviral infection in tropical countries. Global incidence of dengue fever has increased dramatically in the recent decades. There are very few studies based on the revised new dengue classification [6]. Dengue fever is the most rapidly spreading mosquito-borne viral disease worldwide with an estimated 30-fold increase in incidence over last five decades with an unpredictable clinical course and outcome [7]. An estimated 500,000 people with severe dengue infection require hospitalization annually and 90% of them are children <5 years of age. Without proper treatment, the case fatality rate in severe dengue is more than 20% and with timely intervention, it

can be reduced to <1% [8]. The recent epidemics has seen changing pattern of presentation of dengue fever in children especially in the presence of coinfections such as enteric fever and malaria thereby making the clinical decision more difficult and often mislead the physician's initial impression [9]. The present study was conducted to assess cases of dengue fever in Pediatric population.

In present study, out of 52 patients, boys were 32 and girls were 20. We found that common symptoms were fever in 52, vomiting in 40, respiratory distress in 26, pain abdomen in 45, loose stools in 15 and peri- orbital puffiness in 12 cases. Kumar et al. [10] in their study there were 52% of the cases of dengue fever, 16.6% of cases were dengue fever with warning signs and remaining 31.4% of patients were severe dengue. Common Clinical symptoms at admission were fever (100%), vomiting (77%), respiratory distress (56.25%), generalised weakness (54.1%) and pain abdomen (33.3%). Less common symptoms were loose stools (6.25%), periorbital puffiness (6.25%), altered sensorium (4.1%), oliguria (2%) and bleeding manifestations (2%). Out of these dengue children 70.8% of these children improved without complication, 20.8 % of children improved with complication, in the form of ARDS, acute liver failure, DSS, meningitis, 6.25 % of these children went DAMA and 2 % of children expired.

We found that mean hemoglobin level at admission was 12.1 gm% and at discharge was 12.4 gm%. The mean TLC was 56240 cumm of blood at admission and at discharge was 122452 cumm of blood. Mishra et al. [11] in their study a total of 97 cases were classified into 84 (86.59%) nonsevere and 13 (13.40%) severe dengue cases. The most common age of presentation was above 11 yrs. The mean age of admission was 8.7 yrs. The most common presenting symptom was fever seen in 100% and hepatomegaly (43.8%), the most common physical finding. Gastrointestinal bleeding was markedly seen in severe dengue (76.9%). Elevation in aspartate transaminase (SGOT) was found in 47.42% and thrombocytopenia in 27.5%. The correlation between hepatomegaly and elevated SGOT was significant (P value 0.0346). Case fatality rate (CFR) was 1.03%. The mean duration of hospitalisation was 3.8 days.

Pothapregada et al. [12] found that among the 261 confirmed cases of dengue fever non-severe and severe dengue infection was seen in 60.9% and 39.1%, respectively. The mean age (standard deviation) of the presentation was 6.9 + 3.3 years and male: female ratio was 1.2:1. The most common clinical manifestations were fever (94.6%), conjunctival congestion (89.6%), myalgia (81.9%), coryza (79.7%), headache (75.1%), palmar erythema (62.8%), and retro-orbital pain (51.3%). The common early warning signs at the time of admission were persistent vomiting (75.1%), liver enlargement (59.8%), cold and clammy extremities (45.2%), pain abdomen (31.0%), hypotension (29.5%), restlessness (26.4%), giddiness (23.0%), bleeding (19.9%), and oliguria (18.4%). The common manifestation of severe dengue infection was shock (39.1%), bleeding (19.9%), and multi-organ dysfunction (2.3%). The most common complications were liver dysfunction, acute respiratory distress syndrome, encephalopathy, pleural effusion, ascites, myocarditis, myositis, acute kidney injury, and disseminated intravascular coagulopathy. Platelet count did not always correlate well with the severity of bleeding. There were six deaths (2.3%) and out of them four presented with impaired

consciousness (66.6%). The common causes for poor outcome were multiorgan failure, encephalopathy, and fluid refractory shock.

Conclusion
Authors found that common symptoms were fever, vomiting, respiratory distress and pain abdomen.

References
1. Nimmagadda SS, Mahabala C, Booloor A, Raghuram PM, Nayak A. Atypical manifestation of dengue fever where do we stand today. Journal Clinical Diagnostic Res 2014;8(1):71-3.
2. Patil G, Joshi VA, Hungund BR. Clinical spectrum and epidemiology of patients with dengue fever attending a tertiary care hospital in north Karnataka: A cross sectional study. Indian J Applied Res 2015;5(3):298-302.
3. Jakribettu RP, Booloor R, Thaliath A, George SY, George T, Pandokarai M *et al*. Correlation of clinicohaematological parameters in pediatric dengue. Journal Tropical Medicine 2015, 1-7.
4. Mallhi, Hussain T. Clinico-laboratory spectrum of dengue viral infection and risk factors associated with dengue hemorrhagic fever: A retrospective study. BMC Infectious Diseases 2015;15:399.
5. Mandal SK, Ganguly J, Sil K, Chatterjee S, Chatterjee K, Pankaj S *et al*. Clinical profiles of Dengue fever patients in a teaching hospital of Eastern India. National Journal Med Res 2013;3(2):173-6.
6. Balasubramanian S, Anandnathan K, Shivabalan S, Dutta M, Amalraj E. Cut-off haematocrit value for haemoconcentration in dengue haemorrhagic fever. J Trop Pediatr 2004;50:123-4.
7. Goyal V, Gili GS, Singh J, Singh P, Singh Y, Singh S, *et al*. Clinical spectrums of dengue fever in a tertiary care centre with particular references to atypical presentation in the 2011 outbreak at bathinda, Punjab, India 2013;5(4):363-7.
8. Gulati S, Maheshwari A. Atypical manifestations of dengue. Tropical Med Int Health 2007;12(9):1087-95.
9. Kamath RS, Suchitra R. Clinical features, complications and atypical manifestations of children with severe forms of dengue hemorrhagic fever in India. Indian J Paediatrics 2006;73:889-94.
10. Kumar AMK, Patil TR, Veerabadhraiah S. Retrospective study of clinical profile and outcome of pediatric dengue cases in a teaching hospital. Int J Contemp Pediatr 2017;4:226-30.
11. Mishra S, Ramanathan R, Agarwalla SK. Clinical profile of dengue fever in children: a study from Southern Odisha, India. Scientifica 2016.
12. Pothapregada S, Kamalakannan B, Thulasingham M, Sampath S. Clinically profiling pediatric patients with dengue. Journal of global infectious diseases 2016;8(3):115.