

Clinical profile, trend and outcome of Dengue Fever cases admitted at tertiary care hospital, Rajkot, Gujarat, 2014

Jasmin Oza, Bhavesh Kanabar

Resident, Community Medicine Department, P.D.U. Govt. Medical College, Rajkot, Gujarat, India

Abstract

Dengue viral infections are among the most important mosquito-borne diseases of the Indian subcontinent and have become a major global public health concern. Present study describes clinical profile, trend and outcome of Dengue Fever cases admitted at tertiary care hospital, Rajkot, Gujarat, 2014. A cross-sectional prospective study was conducted at PDU Government Medical College, Rajkot during 1st January to 31st December, 2014. All confirmed Dengue cases were admitted in this institute during 2014 included in the study. This study included 145 patients. 62% were males. 69% were in the age group 15-44 yrs. 59% cases were from rural origin. During September to December, 2014, 80% cases were admitted. Fever was present in all the cases i.e. (100%). Most common complication was bleeding from nose and mouth i.e. (66%). Majority of the cases presented with Classical Dengue fever i.e. (90%) followed by Dengue haemorrhagic fever (10%). No any death due to Dengue was reported during study period. 93% cases were discharged from this institute.

Keywords: Classical Dengue fever, Dengue haemorrhagic fever, tertiary care, complications

1. Introduction

The word “dengue” is derived from the Swahili phrase Kadinga pepo, meaning “cramp-like seizure” [1]. Dengue viruses (DV) belong to family Flaviviridae and there are four serotypes of the virus referred to as DV-1, DV-2, DV-3 and DV-4 [1]. Dengue is the most common disease among all the arthropod borne viral diseases. These Infections may be asymptomatic or may lead to (a) “classical” Dengue fever, or (b) Dengue Hemorrhagic fever without shock, or (c) Dengue hemorrhagic fever with shock [2].

Dengue infections vary in severity, ranging from influenza-like self-limiting illness to life-threatening dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS) which, if left untreated, are associated with mortality as high as 20% [3]. The resurgence of dengue has been observed in India and dengue outbreaks have been frequently reported from different parts of the country in both urban and rural populations [4, 9].

According to the World Health Organization (WHO), incidence of Dengue has shoot up 30 fold in the past 50 years [10]. In fact, the problem has become hyper-endemic in many urban, peri-urban and rural areas, with frequent epidemics [11]. Dengue and DHF is endemic in more than 100 countries in the WHO regions of Africa, the Americas, Eastern Mediterranean, South-East Asia and Western pacific. South-East Asia is one of the regions with highest risk of DF/DHF, accounting for 52% of the global risk [12]. The case fatality rate in patients with Dengue hemorrhagic fever (DHF) and Dengue shock syndrome (DSS) can be as high as 40% [13].

During year 2013, about 370 cases were reported with 2 deaths in Rajkot district, 677 cases with 2 deaths in Rajkot Corporation and 1303 cases reported with 8 deaths at PDU Govt. Medical College, Rajkot [14]. PDU Govt. Medical College, Rajkot is located centrally in Saurashtra region or

Gujarat state and patients of surrounding districts are taking treatment at this institute.

The present study was carried out to know clinical profile, trend and outcome of Dengue fever cases admitted at PDU Government Medical College, Rajkot during the calendar year 2014.

2. Materials and methods

A cross-sectional prospective study was conducted at PDU Government Medical College, Rajkot during the calendar year 2014. Suspected cases of Dengue were tested and confirmed for Dengue in the department of Microbiology. All confirmed Dengue cases admitted in this institute from 1st January, 2014 to 31st December, 2014 were included in this study.

The inclusion criteria for selection of cases were all those patients who gave oral consent for participating in the study and in case of children, interview of parents will be conducted to collect the data. The exclusion criteria for selection of cases were all those patients not willing to participate in the study and all those patients who were discharged before Dengue test confirmation report.

A pre-tested semi-structured questionnaire was used for collection of data. At first the data was collected regarding Dengue confirmed cases from Microbiology Department of PDU Government Medical College, Rajkot then personal interview was conducted to collect information regarding clinical profile of Dengue fever cases admitted in this institute. All patients were visited daily for clinical condition and for other case details till discharge or death.

Data collected from the patients included demographic data like age, sex, residence (rural/urban), clinical profile of Dengue patients, complications and its outcome etc. The data entry was done in Microsoft Office Excel 2007 and analysis was done using the same software and appropriate tests were applied.

3. Results & Discussion

The present study was conducted among total of 145 confirmed Dengue fever cases admitted in PDU Government Medical College, Rajkot during Year 2014.

Table 1 shows the socio-demographic profile of Dengue patients revealed that 100(69%) of 145 cases occurred in the age group 15-44 years. This finding are similar to the study by

Ashwini Kumar *et al.* [15] in Karnataka and Saini *et al.* [16] in Western Maharashtra, India. Similarly, study by Ahmed N *et al.* [17] in Delhi, North India reported 70% cases in the age group 11 to 40 years. Male patients were more in this study which was similar to the study by Ashwini Kumar *et al.* [15] in Karnataka but more compared to the study by Karoli *et al.* [18] in North India. 59% patients from were rural areas.

Table 1. Distribution of Dengue cases according to socio-demographic profile (n=145)

Characteristics	Number	Percentage (%)
Residence		
Urban	86	59
Rural	59	41
Age group (in years)		
<5 yrs	08	05.52
5-14 yrs	24	16.55
15-44 yrs	100	68.97
45-60	08	05.52
>60	05	03.45
Sex		
Male	90	62.1
Female	55	37.9

χ^2 (Male: Female) = 8.448, df =1, p=0.004

Figure 1 shows that most cases (80%) in this study admitted during September –December. Similarly 90% cases reported during July – December in the study of Kale AV *et al.* [19] in Maharashtra, India.

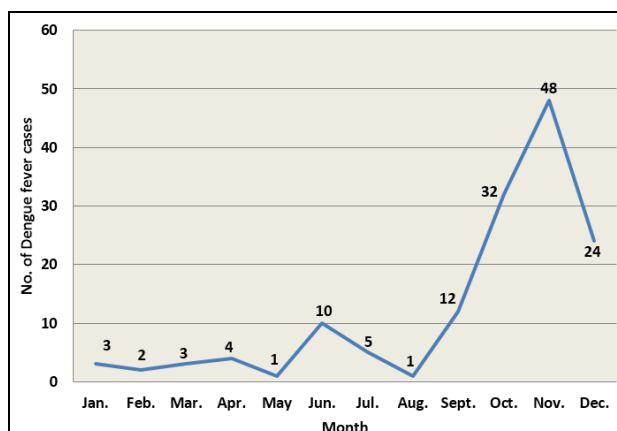


Fig 1: Month wise distribution of Dengue fever cases at PDU Govt. Medical College, Rajkot during Year 2014

Table 2 revealed that the commonest symptoms of DF was fever(100%) which was similar to the study by Dr. Mohan D kushinkunti *et al.* [20] and Ashwini Kumar *et al.* [15] in Karnataka while headache was the commonest symptoms in the study by Karoli *et al.* [18] in North India. Most commonest complication in this study was bleeding from nose and mouth

(65%) followed by hematemesis (11%) and pleural effusion (6%), while petechiae (67%) and ARDS (33%) was commonest complication in study by Ashwini Kumar *et al.* [15].

Table 2: Dengue cases according to symptoms and complications (N=145)

Symptoms	Number	Percentage (%)
Fever	145	100.0
Myalgia/Arthralgia	143	98.62
Headache	139	95.86
Vomiting	113	77.93
Retro orbital pain	101	69.66
Epistaxis	92	63.45
Abdominal Pain	28	19.31
Decreased urine frequency	13	08.97
Skin Rashes	12	08.28
Complications		
Bleeding from Nose & Mouth	95	65.52
Hematemesis	16	11.03
Pleural Effusion	09	06.21
Ascites	04	02.76
Melana	02	01.38
Neurological Symptoms	02	01.38

Table 3 shows 122(84%) cases were admitted at this institute within 5 days of symptoms and 23(16%) cases admitted after more than 5 days of symptoms. Mean days of symptoms to admission at this institute was 4.2 days.

Table 3: Time interval between symptoms and admission at PDU Govt. Medical College, Rajkot (N=145)

Time interval (In Days)	Rural Area (N=86) n (%)	Urban Area (N=59) n (%)	Total (N=145) n (%)
≤ 5 days	70 (81.40)	52 (88.14)	122 (84.14)
>5 days	16 (18.60)	07 (11.86)	23 (15.86)
Total	86 (100.0)	59 (100.0)	145 (100.0)
Mean days	4.5	3.8	4.2

Table 4 revealed that most cases 114 (78.62) were IgM positive and 31(21.38%) were NS1 antigen positive. Kale AV *et al.* [19] showed 54.67% patients were NS1 positive, 28.67%

were IgM positive and 16.66% were both NS1 & IgM positive.

Table 4: Time interval between admission at PDU Govt. Medical College, Rajkot and & Dengue test (N=145)

Interval of symptoms and Dengue test (In Days)	NS1 antigen (N=31) n (%)	IgM antibody (N=114) n (%)	Total (N=145) n (%)
≤ 4 days	31 (100.0)	00 (00.00)	31 (21.38)
> 4 days	00 (00.00)	114 (100.0)	114 (78.62)
Total	31 (100.0)	114 (100.0)	145 (100.0)

Table 5 shows that after admission at this institute, on the first day mean Haemoglobin was 10.69gm%. Mean lowest Haemoglobin while in hospital it was 9.7gm% and at the time of discharge it was 11.2gm%. The difference of lowest Haemoglobin during admission and Haemoglobin at the time of discharge among rural and urban cases was statistically

highly significant. After admission at this institute, mean platelet count on 1st day was 88752/cumm, lowest mean was 68879/cumm and at the time of discharge it was 113869/cumm. The difference of lowest platelet count and platelet count at the time of discharge among rural and urban cases was statistically highly significant.

Table 5: Mean Haemoglobin and Mean Platelet Count at different time (N=145)

Mean count	Mean Hb (gm %)	Mean Platelet Count (cells/cumm)
Mean on First day	10.69	88752
Mean of Lowest	9.7	68879
Mean at the time of discharge	11.2	113869

t test (lowest Hb vs. Hb on discharge) =14.316, df =144, p<0.01, t test (lowest Platelet Count vs. Platelet Count on discharge) =15.756, df =144, p<0.01

Table 6 revealed that the overall outcome of patient care was good, with 63% cases improved & discharged from PDU

Govt. Medical College, Rajkot while 99.33% cases improved & discharged in a study of Kale AV *et al.* [19].

Table 6: Dengue Fever cases according to final outcome

Final Outcome	Rural Area (N=86) n (%)	Urban Area (N=59) n (%)	Total (N=145) n (%)
Discharge	55 (63.95)	36 (61.02)	91 (62.76)
Discharge on request (DOR)	28 (32.56)	16 (27.12)	44 (30.34)
Discharge against medical advice (DAMA)	03 (03.49)	07 (11.86)	10 (06.90)
Death	00 (00.00)	00 (00.00)	00 (00.00)
Total	86 (100.0)	59 (100.0)	145 (100.0)

4. Conclusions

The most common age group for Dengue fever was 15-44 yrs. Male preponderance was seen. More rural patients were admitted as compared to urban areas. Large majority of cases were occurred during September-December. 50% cases were admitted at PDU Govt. Medical College, Rajkot after 4 days of symptoms. Fever was present in all the cases and bleeding from nose and mouth was the commonest complication of Dengue. No any death due to Dengue was reported during study period. Among 145 cases, 93% cases were discharged but 7 % cases were discharged against medical advice.

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