



## Clinical Profile in Dengue Epidemic at A Tertiary Care Centre

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### ABSTRACT

Dengue fever is on rise globally. Dengue epidemics are expanding geographically, even into rural areas. The epidemics in India are cyclical. Dengue can present with varied manifestations. The mortality has been brought down with high index of suspicion, strict monitoring and proper fluid resuscitation. Herewith we are presenting clinical profile of dengue epidemic cases admitted at our institute in two months duration i.e. from Oct 2012 to Nov 2012.

### Introduction:

[1] Dengue is a febrile illness that can have a fatal outcome in severe cases. [2] Dengue Viruses (DV) belong to the family Flaviviridae, with four serotypes of the virus referred to as DV-1, DV-2, DV-3, and DV-4. DV is a positive-stranded encapsulated RNA virus and is composed of three structural protein genes, which encode the nucleocapsid or core (C) protein, a membrane-associated (M) protein, an enveloped (E) glycoprotein, and seven nonstructural (NS) proteins. It is transmitted mainly by *Aedes aegypti* mosquito and also by *Ae. albopictus*. All four serotypes can cause the full spectrum of disease [3]. Dengue fever is characterized by biphasic fever, myalgia, arthralgia, rash, leukopenia and lymphadenopathy. Dengue haemorrhagic fever is a severe, often fatal febrile disease characterized by increased capillary permeability, abnormalities of haemostasis and in severe cases protein losing shock syndrome (dengue shock syndrome). [1] The exact pathophysiology of severe dengue infection (dengue haemorrhagic fever and dengue shock syndrome) is still an enigma, although it is now widely accepted that the host immune system, host genetic makeup, and pathogen virulence all contribute towards the rapid deterioration seen in some patients.

### LIFE CYCLE OF DENGUE VIRUS

- Mosquito feeds on viremic human.
- 10 days extrinsic incubation period.
- Virus passes from intestinal tract to salivary glands.
- Human infection from bite.
- Mosquito remains infectious for life (1 month).
- Can transmit infection with as few as 100 viral particles. [4]

### Aims and Objectives:

To study the epidemiology and clinical profile of Dengue seropositive cases at a tertiary care centre over a 2 month period [Oct 2012 to Nov 2012].

### Material and method:-

A Retrospective review of hospital case papers of Dengue seropositive cases (IgM, IgG and NS1Ag) admitted in Dept of Pediatrics, GMC, Kota [J.K Lon & NMCH Hospital] over a period of two months i.e. Oct 2012 to Nov 2012 was carried out with respect to epidemic clinical profile.

### Results:

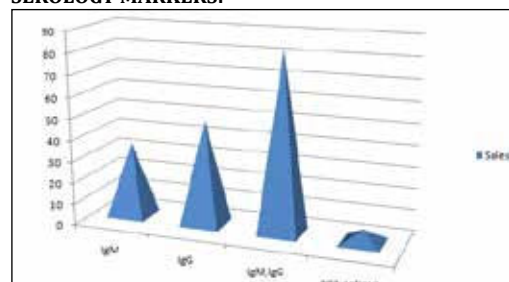
During the 2 months period total 174 Dengue Seropositive cases [94(54.02%) male and 80(45.98%) female] were admitted. Most of the cases 127(72.98%) were from A small village Kumbhkot[7], in Jhalawar district having total population 5432 with a pediatric population {<19 years of age} of 1918 and only 47(27.025%) cases were from urban areas. Majority of the cases, 141 (81.05%) were present in age group 6 to 19 years, only 33(18.95% cases) were in 0 to 5 years age group.

### Distribution of Cases:-

AGE	RURAL		URBAN	
	MALE	FEMALE	MALE	FEMALE
0 to 5 years	14	8	6	5
6 to 19 years	56	50	20	15

Out of these 35 (20.11%) patients were seropositive only for IgM Dengue specific antibody, 49 (28.16%) patients were seropositive for only IgG dengue specific antibody, 84 (48.27%) patients were seropositive for both antibodies (IgM and IgG) [5] [early and rapid elevation of dengue specific IgG antibody is a reliable marker of secondary dengue virus infection and associated with increased risk of severe dengue infection] and only 6 (3.4%) cases were seropositive for NS1 Antigen [6] [NS1 ANTIGEN is a viral non structural protein released by infected cells into circulation & is the earliest marker of acute dengue viral infection].

### SEROLOGY MARKERS:-



Fever was predominant symptom (100%), with nausea and vomiting second most common symptom(54.59%), pain abdomen was third most common symptom(50.75%). 38(21.83%) cases presented with bleeding manifestation along with fever, 23(13.21%) cases presented with rashes with fever.63(36.20%) patients (about 1/3 of total cases) suffered from severe thrombocytopenia (<50,000), out of these only 6(9.52%) had platelet count <10,000.[8] According to the age and sex criteria 125(71.88%) patients had abnormal haematocrit values at the time of hospital admission and according to the age 51(29.31%) patients had [9] abnormal leucocyte count of which 40(78.3%)had leukopenia and 11children(21.56%) had leucocytosis on day 1<sup>st</sup> of hospitalisation . 60(34.48%) hospitalised patients progressed to Dengue Shock Syndrome (having Hypotension), 32(18.39%) cases also had signs of serositis [pleural effusion 20(11.49%) or12( 6.89%) ascites]. Out of Dengue Shock Syndrome cases 13(21.66%) patients had signs of Leak syndrome [Hypotension with ascites/pleural effusion].

**Presenting Symptomatology:-**

S.NO.	SYMPTOM	NO.OF CASES
1.	Fever	174[100%]
2.	Nausea & Vomiting	95 [54.59%]
3.	Pain abdomen	88 [50.75%]
4.	Bleeding manifestations	38 [21.83%]
5.	Rashes	23[13.21%]

**Haematological Markers:-**

HEMATOCRIT LEVEL	PLATELET COUNT	LEUKOCYTE COUNT
Normal level 49 (28.16%)	LESS THEN 10,000 6 (3.44%)	LEUKOPENIA 40 (22.98%)
Hemoconcentration 55 (31.60%)	10,000-50,000 57 (32.75%)	LEUKOCYTOSIS 11 (06.32%)
Hemodilution 70 (40.22%)	MORE THEN 50,000 111 (63.79%)	NORMAL RANGE [as per age & sex] 123 (70.68%)

**Conclusion:**

Dengue disease continues to involve newer areas, newer populations and is increasing in magnitude, epidemic after epidemic. Dengue epidemics are reported to occur, during the warm, humid and rainy seasons, which favor abundant mosquito growth and shorten the extrinsic incubation period [10].

Kumbhkot suffered from dengue epidemic during this season during Oct -Nov2012.

Many factors overlaped in kumbhkot which were-- Rainy season , humid & warm environment, mining areas which were flooded with water, overhead tanks , and many places which are favourable for mosquito breeding. Poor socioeconomic status & lack of knowledge about mosquito preventive measures also lead to sudden outburst of dengue cases in kumbhkot [11].

Prophylaxis against dengue consists of prevention of mosquito bite by the use of insecticides, repellents , body covering with clothings, screening of houses & destruction of A. aegypti breeding sites.

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**Disclosure**

The authors report no conflicts of interest in this work.

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