*IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*
*e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 20, Issue 2 Ser.1 (February. 2021), PP 17-22*
*www.iosrjournals.org*

# Clinical, Pathological and Radiological Profile in Dengue Fever in a Tertiary Care Centre

Dr. Trupti B. Sumakiya*, Dr. Payal N.Brahmbhatt **, Dr. Rinkal R. Angari***, Dr.Alpa A.Shah****

*2 nd year Resident*, 2 nd year Resident**, 2 nd year Resident***, Professor****,*
*Pathology Department, NHL Municipal Medical College , Ahmedabad*

***Abstract***

***Introduction:*** *Dengue is a mosquito borne viral fever, which is prevalent in India. A two year study was conducted from January 2018 to December 2019, to determine the prevalence of dengue infection in patients with clinically suspected dengue fever at Smt. S.C.L. Hospital, Ahmedabad.*

***Aims and Objectives****: The aim of this study was to evaluate the clinical, pathological and radiological findings in dengue fever which are useful for early diagnosis and management of a dengue fever to reduce morbidity and mortality.*

***Materials and Methods:*** *A analytical study was carried out at Smt. S.C.L. Hospital, Ahmedabad, for a period of two years. A total of 7270 cases were included. The samples were tested for dengue NS1 antigen and IgM antibodies using the ELISA Methodology.*

***Results:*** *Out of the 7270 clinically suspected patients of dengue fever, 2018 patients were sero positive in which male to female ratio is 1.4:1. Out of 2018 sero positive cases, maximum sero positivity 71% for NS1, while 9% for Ig M positive and 20% were positive for both. An increase in prevalence of dengue was recorded during the months of August to November. In clinical parameters fever is present in 100% of cases while pruritus were seen in 7% cases.70% of cases shows platelets less than 1,00,000/cumm. In Radiological features, 17.9% cases were presented with pleural effusion while 8% of cases show gall bladder wall thickness.*

***Conclusion:*** *High degree of clinical suspicion, supported by laboratory evidences like thrombocytopenia and specific dengue serological tests help in early diagnosis of dengue.*

***Keywords:*** *Dengue, clinical profile, IgM, NS1*

---

Date of Submission: 22-01-2021 Date of Acceptance: 06-02-2021

---

## I. Introduction

Dengue is an acute febrile illness causing significant mortality and morbidity.[1]Dengue is transmitted through the bite of infected Aedes mosquitoes, mainly Aedes aegypti. The prevalence is high in tropical countries where the vector Aedes aegypti and Aedes albopictus are found abundantly as the climatic conditions and the monsoons are favourable for them.[2]

It is caused by four serotypes of dengue virus, namely DEN-1 to DEN-4 belonging to genus Flavivirus and family Flaviviridae.

It is also known as "Break bone fever'' because of the symptoms of myalgia and arthralgia. Serious manifestations occur more frequently in reinfections.[3]

World Health Organization(WHO) has conferred it as a notifiable disease and since 2005 dengue is considered as a public health emergency of international concern.[4-6]

The infection with any dengue virus serotypes may manifest with a wide spectrum ranging from asymptomatic infection to an undifferentiated fever, classical dengue fever, and severe forms of fever (DHF) and Dengue shock syndrome (DSS).[2] After an incubation period of 3-14 days, patients present with sudden onset of fever, headache, backache, retro orbital pain, sever myalgia, pain in the back and limbs (Break bone fever), lymphadenopathy and macula papular rash. Other common symptoms include weakness, abdominal pain, sore throat, headache and vomiting, but the severity of illness and clinical manifestations vary with age, virus strain and immune status of the host.

Mortality rates in patient with dengue infection can be reduced by early diagnosis.[7] The differentiation between dengue and other acute febrile illness is necessary for the appropriate diagnosis and prompt management of cases.[8]

Proper diagnosis is the most challenging aspect of dengue infection. There is currently no specific treatment is available and potential vaccines are also in the developmental stage, therefore the only method of protecting against DENV transmission is vector control.

## II. Aims & Objective

To evaluate the clinical, pathological and radiological findings in dengue fever which are useful for early diagnosis and management of a dengue fever to reduce morbidity and mortality**.**

## III. Materials And Methods

This retrospective study was conducted for 2 year, Jan 2018 to Dec 2019 at Smt. S.C.L. Hospital, Ahemdabad. A total of 7270 samples were tested during this period.
Patients of either sex & any age showing signs & symptoms suggestive of dengue fever were included in the study.
Laboratory investigations done were: CBC, liver function tests, renal function tests, blood sugar and other tests as per requirement.
Radiological investigations done were: Xray and Ultrasonography.
Serological tests included ELISA for NS1, IgM

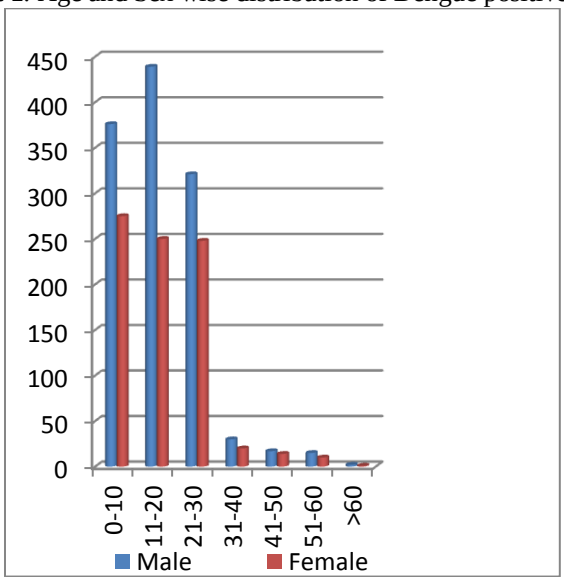
## IV. Results

**Table:1** Sero positive cases Vs sero negative cases

| | Total no.of clinically suspected cases | Sero positive cases | Sero negative cases |
|---|---|---|---|
| Number | 7270 | 2018 | 5252 |
| Percentage | 100% | 28% | 72% |

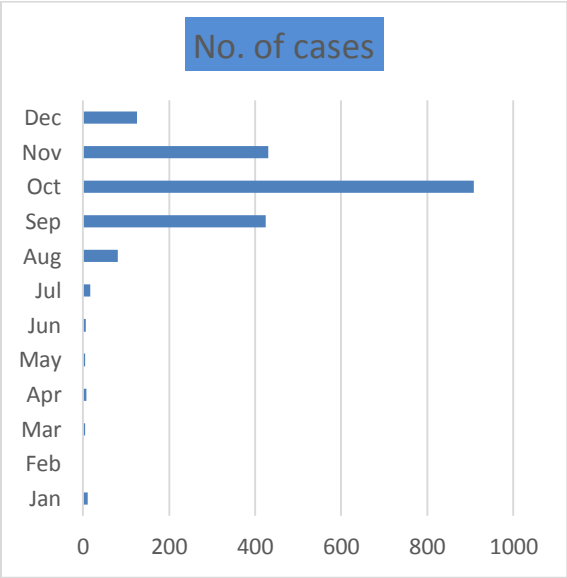
Out of 7270 cases 2018 were seropositive. Out of 2018 cases 1200 were males and 818 were females

**Chart 1**: Age and Sex wise distribution of Dengue positive cases




Among 7270 patients included in this study the age ranged between 6 months to 80 years. There were 1200(60%) men & 818(40%) women. Maximum number of positive cases were in age group 11-20 years (689) followed by age group of 0-10years (651).

**Chart: 2** Month wise distribution of positive cases




Maximum number of positive cases (909) were in month of October

**Chart: 3** In 2018 sero positive cases, platelet count was most commonly in range of 50,000- 1lakh

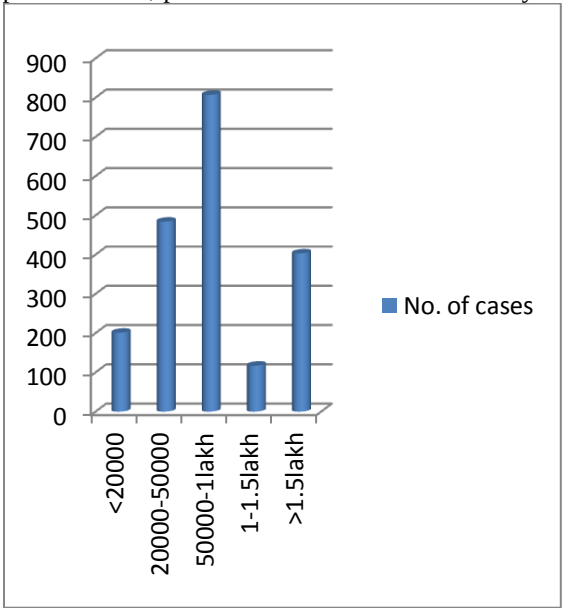
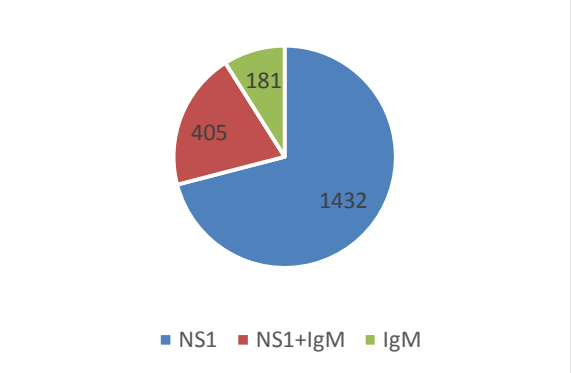



**Chart:4** ELISA-Pattern of Sero positivity

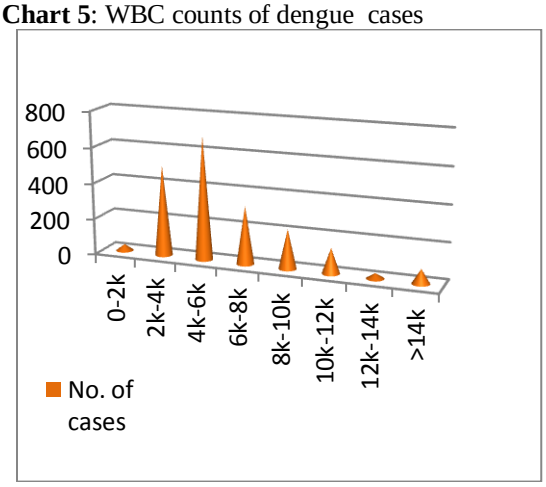


Out of 2018 cases, 71% were sero positive for NS1, 9% were sero positive for IgM antibodies and 20%were positive for both.

**Table 2:** Distribution of clinical features in dengue fever cases

| **Clinical features** | **No. of Patients** |
|---|---|
| Fever | 2018(100%) |
| Headache | 1545(76.6%) |
| Myalgia | 1311(60%) |
| Abdominal pain | 766(38%) |
| Coryza/sore throat | 686(34%) |
| Nausea/vomiting | 670(33.2%) |
| Retro-orbital pain | 524(26%) |
| Skin rash | 440(21.8%) |
| Insomnia/lethargy | 282(14%) |
| Bleeding manifestations | 242(12%) |
| Breathlessness | 181(9%) |
| Positivee tourniquet test | 161(8%) |
| Jaundice | 149(7.4%) |
| Pruritis | 141(7%) |

**Chart 5**: WBC counts of dengue cases




In this study, in dengue positive cases WBC counts were most commonly in range of 4000-6000

**Chart: 6** Distribution of ultra sonographic findings in Dengue fever positive cases

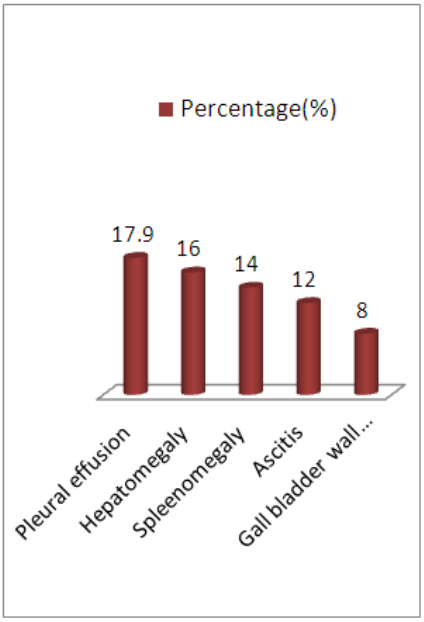


**Table:3** Laboratory parameters of dengue fever cases

| **Lab Parameters** | **No. of patients** |
|---|---|
| Haemoglobin(<10) | 565(28%) |
| Haematocrit(>40%) | 807(40%) |
| Leucocytosis(>14000) | 100(5%) |
| Leucopenia<4000 | 1392(69%) |
| Serum bilirubin>2mg% | 298(14.8%) |
| SGOT(>45IU/L) | 371(18.4) |
| SGPT(>45IU/L) | 464(23%) |
| Serum creatinine>1.5mg/dl | 56(2.8%) |

## V. Discussion

**Table 4**: Comparison between haematological finding of dengue positive cases in present study with other studies.

| **Various Studies** | Hb <10 mg/dl | Raised Heama-tocrit >40 | Leuco Penia <4000 | Raised SGOT & SGPT |
|---|---|---|---|---|
| Kauser et al[9] | 4.10% | 57.5% | 43.8% | 27.4% & 24.65 |
| Khan et al[10] | - | 23.3% | 38.6% | 40.6% & 28% |
| Deshwal et al[11] | - | 20.7% | 20.19% | 88.54% |
| Present study | 28% | 40% | 69% | 18.4% & 23% |

**Table 5**: comparison of month of max cases, M:F ratio and sero positivity with different studies

| **Various study** | Months of max. cases | Male: Female Ratio | Pattern Of Sero-positivity |
|---|---|---|---|
| Kauser et al[9] | Aug-Oct | 1.7-1 | NS 1 in 76.71% |
| Khan et Al[10] | Sept-Nov | 1.67-1 | Kinikar et al[13] (%NS1 In 76%) |
| Modi et Ai[12] | Sept-Nov | 2.35-1 | - |
| Present study | October Sept | 1.4-1 | 71% |

**Table 6:** Comparison between ultra sonographic findings of the dengue positive cases in present study and in other studies

| Various study | Pleural effusion | Hepato-megaly | Spleeno-megaly | Ascitis |
|---|---|---|---|---|
| Khan et al[10] | 11.3% | 12.6% | 15.3% | 14.6% |
| Desh Wal et al[11] | 20% | 14.8% | 13.2% | 16.3% |
| Modi et al[12] | 10.5% | 66.9% | 22.2% | 12.2% |
| Present study | 17.8 | 16% | 14% | 12% |

## VI. Conclusion

Clinical suspicion and laboratory tests are needed to provide an early and accurate diagnosis of dengue virus infection for appropriate early patients management, to prevent development of complications like DHF and DSS and to initiate early public health control of dengue outbreaks.

Early identification of dengue infection in acute phase sera using NS1 antigen is valuable in terms of disease progression and mortality.

Increase in the prevalence was seen during the rainy seasons when the vectors are present abundantly.

## Reference


[1]. WHO. Dengue; guidelines for diagnosis, treatment, prevention and control in sub-Saharan Africa and 13 countries in South Africa. Geneve:WHO;2009.

[2]. Jawetz, Melnick & Adelberg's Medical Microbiology, 26th edition;564-566.

[3]. Tabasum BM. Sumana MN, Basavana GH. Evaluation of Rapid ICT in comparison with MAC-ELISA in diagnosis of dengue fever at a tertiary care hospital, South India.DPSI 2014;3(12)11-64.

[4]. Kale AV, clinical profile and outcome of dengue fever from a tertiary care centre at Aurangabad Maharashtra India:an observational study.ISOR journal of dental and medical sciences.2014;13(9):14-19

[5]. Chatterjee N et al, an observational study of dengue fever in a tertiary care hospital of eastern India. Journal of the association of physicians of India.2014;62.224-227.

[6]. S.AhammadF,Clinicodemographic profile of dengue fever in a southindian tertiary care hospital. World journal of Pharmacy and Pharmaceutical Sciences.2016;5(1):1602-1609.

[7]. Tantawichien T. Dengue Fever and Dengue Hemorrhagic Fever In Adults. Southeast Asian J Trop Med Public Health.2015;46 Suppl 1:79-98.

[8]. Noyd DH, Sharp TM. Recent Advances in Dengue: Relevance to Puerto Rico. P R Health Sci J.2015 Jun;34(2):65-70.

[9]. Kauser MM, Kalavathi GP, Radadiya M, Karthik M, Afreen A, Kumaraswamy RC, et al. A study of clinical and laboratory profile of Dengue fever in tertiary care hospital in central Karnataka, India.GJMR (B). 2014;14(5):7-12.

[10]. Khan E, Siddiqui J, Shakoor S, Mehraj V, Jamil B, Hasan R. Dengue outbreak in Karachi, Pakistan,2006; experience at a tertiary care centre. Trans R Soc Trop Med Hyg. 2007;101:1114-9.

[11]. Deshwal R, Qureshi MI, Singh R. Clinical and laboratory profile of dengue fever. JAPI.2015;63:30-2.

[12]. Modi TN, Sriram AS, Mehta AD, Patil PS. Trends in the clinical and hematological profile of patients with dengue fever. Int J Adv Med 2016;3:1002-10.

[13]. S.Saini,anagha G kinikar. Epidemiology and sero positivity of dengue fever cases in a rural tertiary care hospital of western Maharashtra,India. IJBAR(2013)04(07)


Dr. Trupti B. Sumakiya, et. al. "Clinical, Pathological and Radiological Profile in Dengue Fever in a Tertiary Care Centre." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(02), 2021, pp. 17-22.