Research Article CODEN: IJPRNK ISSN: 2277-8713
N. Padmaja, IJPRBS, 2015; Volume 4(4): 157-161 IJPRBS

INTERNATIONAL JOURNAL OF PHARMACEUTICAL RESEARCH AND BIO-SCIENCE

INCIDENCE & SERODIAGNOSIS OF DENGUE FEVER IN AND AROUND AMALAPURAM

DR. N. PADMAJA

ASSOCIATE PROFESSOR, DR. P. NAGESWARARAO, PROF&HOD, KIMS, AMALAPURAM.

Accepted Date: 06/07/2015; Published Date: 27/08/2015

Abstract: Dengue is an acute infectious disease of viral etiology. It is probably, one of the most important arthropod borne viral disease in terms of human morbidity & mortality. The spectrum of the disease ranges from self limiting Dengue fever to more severe forms of Dengue haemorrhagic fever (DHF) or Dengue Shock Syndrome (DSS). Laboratory diagnosis of dengue virus infection mainly depends on detection of virus specific antibodies. The aim of the study was screening for Dengue IgM & IgG antibodies in clinically diagnosed / suspected dengue cases and to compare with clinical features. Out of 200 clinically diagnosed Dengue cases. 22 were positive for Dengue (11%). Of which 6 were positive for IgM, 18 for IgG and 10 for both IgM & IgG. Of the 35 enteric fever cases, 10 were WIDAL positive and 25 were WIDAL negative. Out of 10 WIDAL positive cases, 2 were Dengue IgM positive and in 25 WIDAL negative cases, 3 were positive for Dengue IgM. Similarly among 25 suspected malaria cases, 4 were positive for malarial parasites, of which 1 case showed Dengue IgM positivity. 21 cases were malaria negative of which 2 were Dengue IgM positive. Screening for Dengue IgM in fever cases revealed the missing cases of Dengue in otherwise not suspected or clinically diagnosed, which shows the need for detection of Dengue IgM antibodies in all febrile illness cases.

Keywords: Dengue fever, Dengue haemorrhagic fever, IgG, IgM antibodies, WIDAL test, Malarial parasite

PAPER-QR CODE

Corresponding Author: DR. N. PADMAJA

Access Online On:

www.ijprbs.com

How to Cite This Article:

N. Padmaja, IJPRBS, 2015; Volume 4(4): 157-161

INTRODUCTION

Dengue is an acute febrile viral disease, known even to common people today. Three decades ago, the health case providers in our country might not have imagined that this condition could be a major health problem. This potentially fatal acute viral infection also called as break bone fever, can cause scary out breaks associated with complications like haemorrhages and shock. Mortality in untreated cases can be 5 % and there is no vaccine for prophylaxis. With the introduction of immunochromatography, detection of cases in the field setting became easier.

Dengue is fast spreading in Andhra Pradesh especially more number of cases are seen in around the rural areas of Amalapuram, East Godavari (dt), Andhra Pradesh. Single, but properly timed blood sample is sufficient to detect Dengue IgM antibodies. IgM responses of Dengue are usually less cross reactive to other flavi viruses, but minimal cross-reactivity to Malaria was reported.

AIMS & OBJECTIVES:

1. Screening Dengue IgM & IgG antibodies in clinically diagnosed Dengue cases.
2. Screening for IgM antibodies to Dengue in other fever cases which are not clinically suspected as Dengue are evaluated for Malarial parasite (M.P) and WIDAL test to detect cross reactivity / mixed cases.

MATERIALS & METHODS:

The present study was conducted in the Department of Microbiology, KIMS R&F, Amalapuram, East Godavari(dt), Andhra Pradesh from September 2014 – February 2015. Material for the present study consists of 200 clinically diagnosed / suspected as Dengue (study group – I) and 60 cases of fever were evaluated for M.P and WIDAL test attending to medical & paediatric departments (study group – 2).

1. Study group – I: Fever with 2 or more of the following features - Headache, Retro-orbital pain, nausea & vomiting, body pains, rash myalgia, arthralgia, abdominal pain, bleeding tendencies.
2. Study Group – II : Other fever (60 cases) with 2 or more of the following - fever with chills, headache, nausea & vomiting, body pains, rash myalgia.

Sample collection: 5 ml of blood was collected by venepuncture under aseptic conditions into sterile test tube without any coagulant. The blood was centrifuged and clear serum was transferred into vials and stored in the deep freezer till subjected to the test.

- Dengue IgM & IgG detection was done by using Immounochromatography (SD) and confirmed by ELISA.
- 35 Enteric fever cases were screened by WIDAL test.
- In 25 suspected malarial cases, 2 peripheral blood smears were made and stained by Leishman's staining method and looked for ring forms & gametocytes.

RESULT:

Out of 200 cases clinically diagnosed as Dengue, 22 cases were Dengue positive (11%). Out of this, 15 are from urban and 7 cases are from rural areas. Higher incidence was seen during season. Incidence is seen high in males (14 cases) compared to females (8 cases).

Table – I: Total No. Of cases

Clinical diagnosis	No. Of Patients
Dengue	200
Enteric fever	35
Malaria	25

Table – II: Dengue IgM & IgG seropositives – Study group – I

Test	No. Of Positives
IgM	6
IgG	18
IgM + IgG	10

Table – III: IgM Dengue seroprevalence in other fever cases

Test	No. Of cases	IgM Positives
WIDAL Positive	10	2
WIDAL Negative	25	3
Malaria Positive	4	1
Malaria Negative	21	2

Table – IV: Clinical features in IgM Positive cases

Clinical features	Dengue	WIDAL Positive	WIDAL Negative	M.P Positive	M.P Negative
Fever	22	10	30	4	21
Headache	10	1	1	0	0
Nausea & Vomiting	6	2	2	0	0
Myalgia	5	0	0	0	0

Table – V: Clinical presentation in Dengue Positive cases

Positive	Bleeding tendencies	Rash
Only IgM	1	0
Only IgG	2	3
IgM + IgG	1	1

DISCUSSION:

Prevalence of dengue is more in urban areas may be due to poor sanitation and also may be due to the habitat of Aedes mosquito, being more in urban areas. Male predominance is seen (2:1) and it is same in study conducted by Ekta Gupta et al. Seasonal trends seen in the present study were due to the presence of stagnant water during rainfalls which favour's mosquito breading. IgM positivity indicates acute / recent infection. IgG positivity indicates chronic/past infection. Both IgM & IgG positivity indicates acute and chronic infection.

Dengue IgM sensitivity among suspected cases indicate active dengue virus activity. In the present study the clinical presentation of dengue was with fever followed by headache, nausea & vomiting, being predominant features. Presence of body aches and rashes are comparatively less. It correlates with the study conducted by Neeraja et al. IgM positivity in WIDAL positive cases could be due to anamnestic response, IgM positivity in MP positive cases could be the cross reactivity or might be a co-infection. IgM positivity in WIDAL negative and MP negative cases could be the missing cases.

There fore screening for dengue IgM in fever cases revealed the missing cases of dengue in other wise not suspected or clinically diagnosed, which allows the need for detection of dengue IgM antibodies in all acute febrile illness cases.

REFERENCES:

1. Ekta Gupta, Lalit Dar, Priyanka Narang, Srivastava V.K, Broor S. Serodiagnosis of dengue during an out break at a tertiary case hospital in Delhi, India J Med Res. January 2005:121:36-38.

2. Ukey PM, bondade SA , Paunipagar PV, Powa RM, Akulwar SL, Study of seroprevalance of dengue fever in central India. Indian J Community Med. 2010 :35(4):517-9.

3. Neeraja.M, V.Lakshmi, VD Teja, P. Umabala, MV Subbalakshmi, Serodiagnosis of dengue Virus infection in patients presenting to a tertiary care hospital: Indian journal of Medical Microbiology 2006: 24(4): 280-282.

4. World health organisation. Dengue guide lines for diagnosis treatment, prevention & control: new edition, Geneva : 2009, 1::149.

5. Ratho RK, Mishra B, Kaur J, Kakkar N, Sharma, K, An outbreak of dengue fever in Peri urban slums of Chandigarh, India with special references to entomological & climatic factors, Indian J.Med Sci – 2005: 59(12): 519-27.

6. T sai TF, Flavi viruses, yellow fever, Dengue DH, JE, St.Louis encephalitis, Tick born encephalitis. Chapter 142. In: Principal & practise of infectious disease, 5th ed Mandell, Benne H, Dolin Churchill Livingston: Pennsylvanea, USA: 2000, p1716.

7. WHO. 2011. Comprehensive guidelines for prevention and control of dengue fever and dengue haemorrhagic fever. In Geneva, Switzerland: World Health Organization: 2011.

8. Gould EA, Solomon T.2008. “Pathogenic Flavi viruses”. The Lancet 371 (9611): 500-9.

9. Guznan MG, Halstead SB, Artsob H, et al 2010. Dengue: a continuing global threat. Nature Reviews Microbiology: 8 (supplement 12): S7-S16.