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Retrospective Observational Study Of Platlet Count In Dengue Fever With IGM Positive Casesinteritiary Care Hospital.

[1]Dr.K.Mohan Rao ,[2]Dr.Padma sravani.S,[3]Dr.R.Srinivasarao,[4]Dr.Sowmya.B
[1]*Associate professor ,Department of General medicine ,Government medical college ,Anantapuramu.*
[2]*Assistant professor ,Department of pharmacology, Government medical college,Anantapuramu.*
[3,]*Professor and HOD in department of pharmacology,Government medical college,Anantapuramu*
[4]*Postgraduate in department of pharmacology,Government medical college,Anantapuramu*
Corresponding Author – Dr.Padmasravani .s

Abstract:
Background: *Arthropod borne viral diseasecaused by flvivirus transmitted by aedesaegypti mosquito.*
Objectives: *To study the platlet count in IgM positive cases of dengue fever in tertiary care hospital, anantapuramu.Andhra Pradesh.*
Material and methods*: Retrospective analysis of 200 dengue cases from government general hospital ,anantapuramu..only confirmed IgM (ELISA) cases were analysed for platletcount of age group between 18 -65 years .*
Conclusion: *Among these 80%(160) have platlet count less than one lakh ,12% have platlet count between 1-1.5 lakh and 8% have platlet count between 1.5-2.5 lakhs.our study concludes thatseverethrombocytopaenia occurs after the IgM antibodies appearance.*

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I. Introduction

Dengue fever is probably most important arthropod borne viral disease worldwideand is caused by flavivirus that cause fever,myalgia syndrome by dengue viruses 1-4. All four viruses haveaedesaegypti as their principal vector. .Dengue is widespread throughout tropics.[1]Dengue fever caused by flavivirus causes fever,myalgia syndrome by four serotypes [2] .One recent estimates indicates 390 million dengue infections per year (95% credible interval 284-528 million) of which 96 million manifest clinically.[3]Prevalance of dengue estimates that 3.9 billion people in 128 countries are at risk of infection with dengue virus.[4]Dengue is second most re-emerging tropical disease.[5] WHO declared dengue as most important mosquito borne disease in world.[6,7]India alone occupies 34% of global dengue burden.Aedesaegypti typically breeds near human habitation,usually in fresh water from sources such as waterjarsvases,discardedcontainers,coconut husks and old tyres.Dengue begins after incubation period of 4-7 days,typical patient experiences the sudden onset of fever,frontalheadache,retroorbitalpain,backpain along with severe myalgias.These symptoms give rise to designation of dengue as "break bone fever". Dengue fever classified as undifferentiated fever, dengue fever,denguehaemarragic fever.[8]Dengue illness is characterised by three distinct phases like febrile phase,criticalphase,recovery phase.[9]Labaratory findings of acute dengue include leucopenia ,thrombocytopaenia and in many cases elevation of serum aminotransferase concentrations.Labaratory diagnosis of dengue fever by virus culture, detection of viral RNA by RT-PCR excellent result within 24-48hrs.Detection of viral antigen (NS 1) by ELISA or rapid test –kit is most popular test.Specific antibodies by Mac-ELISA format is most commonly employed diagnostic test.[10] Diagnosis is made by IgM ELISA or paired serology during recovery or by antigen detection ELISA or RT-PCR during the acute phase.severe.Dengue is identified by the detection of bleeding tendencies(torniquit test ,petichiae)or overt bleeding in the absence of underlying causes such as pre-existing underlyinggastrointestinalleisons.shock may result from increased vascular permeability.samples with a negative IgG in the acute phase and a positive IgM in the convalescent phase of the infection are primary dengue infections.samples with a positive IgG in the acute phase and a fourfold raise in IgG titre in the convalescent phase within at least a seven days interval between two samples is a secondary dengue infection .Both IgM and IgG are produced after 5-7 days of illness. our study outlines the platlet count in IgMpositive case in teritary care hospital, Anantapuramu.

II. Material And Methods

Retrospective observational study done in department of general medicine at govt. Medical college,anantapuramu,Andhra Pradesh from January 2017 to December 2017.Atotal of 200 adult subjects (both males and females) of aged >18years were for in this study.

Study design : Retrospective observational study .

Study location :Teritary care hospital based study done in department of general medicine at government general hospital, anantapuramu,Andhra Pradesh.

Study duration :January 2017 to December 2017.

Sample size : 200 patients.

Selection method :Records of one year IgM positive cases were collected from govt. Medical college and hospital ,anantapuramu ,Andhra Pradesh.Pattern of platlet count in IgM positive cases can be recorded. Percentage of people catogariesed –

platlet count < 1lakh

platlet count – 1 -1.5 lakh

platlet count – 1.5 -2.5 lakh

Statistical analysis : Data were entered in Microsoft excel software and was analysed by microsoft excel 2009.Institutional ethical commitee permission was sought prior to conduction of study.

III. Results

Total 200 cases of IgM positive cases of dengue from period of January 2017 to December 2017 considered .

Platelet count below 1 lakh	80%
Platelet count between 1 to 1.5 lakh	12%
Platelet count between 1.5 to 2.5 lakh	8%

Table 1 Repesents the platlet count in IgM Positive patients

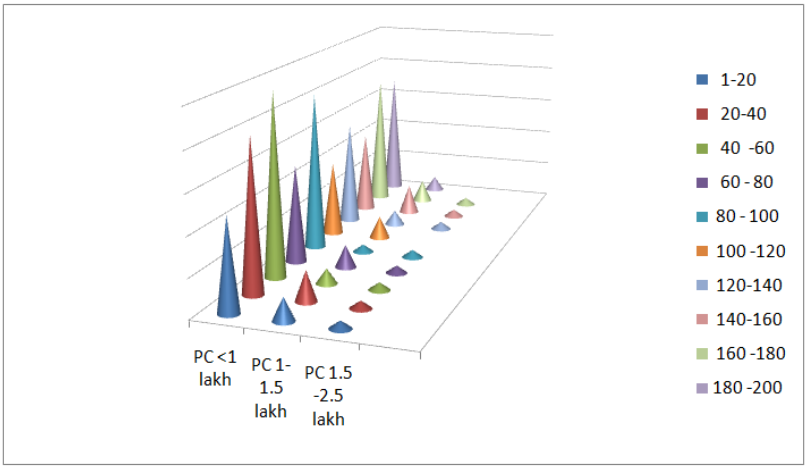
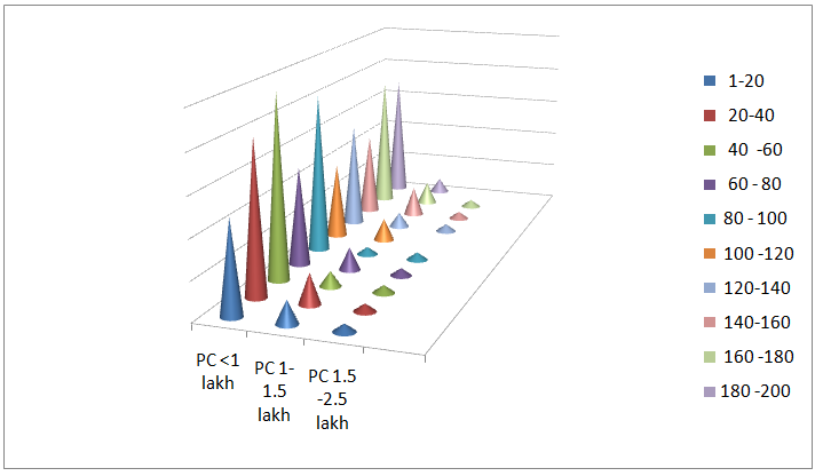


Fig No.1 Diagrammatic representation of platlet count in IgM Positive cases.



Graph no. 1shows that percentage of platlet count in IgM positive cases.Graphically represents the percentage of people with platlet count(PC) less than 1 lakh,,platlet count (PC)between 1-1.5 lakh and platlet count (PC) 1.5-2.5 lakh .

IV. Discussion

In past decade ,dengue has been occurring regularly in india,with periodic surges in number of cases.[11]Analysis of the year-wise distribution of dengue cases revealed an unsteady increase in number of dengue patients over the past few years.This may be partially attributed to the rapid urbanization ,with unchecked construction activities and poor sanitation facilities contributing fertile breeding grounds for mosquitoes .Increased alertness to the disease among the medical fraternity ,following the initial epidemic and the availability of diagnostic tools in the hospital ,has contributed to increased detection of cases.[12]Study conducted on 200 cases of hospitalised IgM positive dengue for the period of January 2017 to December 2017 in tertiary care hospital ,anantapuramu. It is record based retrospective observational study conducted at teritary care centre ,anantapuramu.AndhraPradesh.Dengue specific antibodies begin to appear only around fifth day of fever in primary infection[11]Sometimes IgM/IgG antibodies cannot be detected before the third day of fever in dengue secondary infection .Common clinical features included fever, vomiting, headache, myalgia, abdominal pain, petechiae, melena, maculopapular rash, and retro-orbital pain as shown in the previous studies. Skin bleeds in the form of petechiae was the most common hemorrhagic manifestation followed by melena as against epistaxis in some studies. Hepatomegaly followed by narrow pulse pressure and hypotension were common clinical findings.Dengue fever has three phases namely, the febrile phase, the critical phase and the stage of plasma leakage. The febrile phase is characterized by dehydration. In the critical phase there is plasma leakage with accumulation of fluid in third spaces such as pleural and peritoneal cavities and the recovery phase may lead to hypervolemia especially if large amounts of fluids are being administered. diagnosis of dengue fever by virus culture, detection of viral RNA by RT-PCR excellent result within 24-48hrs.Detection of viral antigen (NS 1) by ELISA or rapid test –kit is most popular test.Specific antibodies by Mac-ELISA format is most commonly employed diagnostic test. Diagnosis is made by IgM ELISA or paired serology during recovery or by antigen detection ELISA or RT-PCR during the acute phase.severe dengue is identified by the detection of bleeding tendencies(torniquittest ,petichiae)or overt bleeding in the absence of underlying causes such as pre-existing underlyinggastrointestinalleisons.shock may result from increased vascular permeability.

In our study it was concluded that , 200 cases of hospitalisedIgM positive cases of platlet count less than one lakh in 160 (80%)cases,platlet count between 1-1.5 lakh in 25(12%) cases and platlet count between 1.5 -2.5lakh in 15(8%)cases Fig (1)

	Present study	Study of krunal D. Mehta et al[15]
No. of cases positive for IgM only	200	200
Platlet count less than onelakh in IgM positive cases	160	148
Platlet count more than one lakh in IgM positive cases.	40	52

Table No.2 Comparison of studies regarding association of thrombocytopaenia with Dengue IgM positive cases.

Among two IgM and IgG ,IgG is less reliable marker for diagnosis .[11]Contrary to previous report no of cases came down in 2013 and 2014 but again increased from 2015. But overall India common pattern was gradual increasing number of cases in each year.[12] This study showed that platlet count in 80% of cases was less than one lakh,12% of cases was between 1-1.5 lakh and only 8% of cases with 1.5 -2.5 lakh.

Another study was conducted(January 2015 to December 2015) in a tertiary care centre of south India showed that IgM positivity rate was 5.8%[13]

In study of R.D.kulkarni et.al[14] taken 2104 samples were tested out of which 161(50%) were positive for IgM positive only .This study also shown the association between IgM positive cases and thrombocytopenia.

KrunalD.Mehta et al ,[15] 1628 patients tested ,563 were positive for dengue parameters .of 563 ,363 were positive for NS 1 antigen only,200 were positive for IgM only .Thrombocytopaenia was more with IgM positive cases compared to Ns1 detection.

Our study shown that thrombocytopaenia in 80% cases less than one lakh compared to other studies conducted by R.D .Kulkarni et al and Krunal D Mehta et al.

Higher association of IgM and thrombocytopenia in our study may be due to most of the cases coming to our hospital were reffered from various places .This may result in delay in diagnosis and thus increasing morbidity.Out of these dengue specific parameters,platlet count is the only laboratory parameter performed in remote areas because of cost effectiveness and easy to perform without requiring costly setup that can support the diagnosis of dengue infection.such predictions will help to reduce complication due to late treatment and initiate the preventive and control measures well in time for the containment of spread of the disease.so,studies

like this will contribute significantly to the clinical management and reduce morbidity and mortality in dengue infection.

V. Conclusion

Our study shown thrombocytopaenia< one lakh in 80% of cases which was higher than other comparable studies. Presence of severe thrombocytopaenoia could be a marker of early dengue infection especially when combined with other indicators.Thrombocytopaenia in IgM positive cases also may be a marker for the stage of plasma leakage necessitating increased fluid administration. Drawback of this study was that not considered all laboratory findings. More studies are required to look for serial platlet count and hematocrit levels during the course of dengue infection.

References

[1]. WHO Fact sheet No 117:Dengue and dengue haemarrhagic fever.(2008) Available at http://www.who.int/mediacentre/factsheets/fs117/en / Accessed on 12 July 2016.
[2]. Harrison's manual of medicine- 19 th edition :104:550
[3]. Bhatt S, Gething PW, Brady OJ, Messina JP , Farlow AW , Moyes CL et al, The Global distribution and the burden of dengue. Nature;496:504-507.
[4]. Brady OJ, Gething PW , Bhatt S, Messina JP , Brownstein JS, Hoen AG et al. Refining the global spatial limits of dengue virus transmission by evidence-based consensus. PLoSNegl Trop Dis. 2012;6:e1760. Doi:10.1371/journal.pntd.0001760.
[5]. World Health Organisation. Epidemiological surveillance Assessment Report-[1] 2006. Geneva: WHO [online].2013 [cited 2017, Oct 21]. Available from:http:// apps.who.int/.iris/bit stream/10665/43432/1/9241563176-eng.pdf
[6]. WHO | Global Strategy for dengue prevention and control, 2012-2020[Internet].[4] WHO.[cited 2017 Oct 21]. Available from: http://www.who.int/denguecontrol/ 9789241504034/en/ Aung KLL,
[7]. Thanachartwet V , Desakorn V Chamnanchanunt S , Sahasananda [5] D, Cheirakul W , et al. Factors associated with severe clinical manifestation of dengue among adults in Thailand , South east, Asian J Trop Med Public Health. 2013;44[4]:602-12.
[8]. WHO (2009) dengue guidelines for diagnosis, treatment , prevention and control WHO (2009). Available at http://whqlibdoc. Who.int/publications/2009/9789241547871 eng.pdf. Accessed on 5 July 2012.
[9]. Harrison'manual of medicine -19 th edition ;104: 551 -2
[10]. KaroliR,FatimaJ,SiddiquiZ,Kazmi K, Sultana R A.Clinical profile of dengue infection at a teaching hospital in North India.J Infect Dev Ctries.2012;6(7):551-4.
[11]. Singh B.Dengue outbreak in 2006.failure of public health system ?indianJ.community Med.2007;32:99-100.
[12]. Shah GS,IslamS,DasBK.Clinical and laboratory profile of dengue infection in children.Katnhmandu University Med.J2006;13:40-4.
[13]. Peeling RW,ArtsobH,PelegrinoJL,BuchyP,CardosaMJ,DeviS,etal.Evaluation of diagnostic tests:Dengue .Nat Rev Microbiol 2010;8:S30-7.
[14]. D.current status of dengue and chikungunya in India .WHO South-East Asia J Public Health 2014;3(1):22-27.
[15]. G.BathalaNS,Bai SK ,SasikalaA,Bharati M,A Study on Dengue Infection among Febrile Illness Cases in a Tertiary care Hospital in South India.International Journal of Innovative Research in Medical Science (IJIRMS) Volume 01 issue 09 Nov 2016;363-5.
[16]. R.D.kulkarni et al ,association of platlet count and serological markers of dengue infection.Indian J Med microbiology .2011 .Dec,29(4):359-62.
[17]. Krunal.D.Mehta,BindiyaGhediya et al ,Study of correlation between platlet count and serological Markers of Dengue Infection with Importance of NS1 Antigen in Western Region of India.National journal of Laboratory Medicine .2016 Apr,5(2):55-59.

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