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Ocular Manifestations in Dengue Haemorrhagic Fever

Medical Science

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Dr. M. Parni Kumar	Professor& HOD OF OPHTHALMOLOGY , GUNTUR MEDICAL COLLEGE , GUNTUR , (AP) INDIA
Dr. G. Ravi Babu	ASSOCIATE PROFESSOR OF OPHTHALMOLOGY , GUNTUR MEDICAL COLLEGE , GUNTUR , (AP) INDIA
Dr. G. Sowjanya	M.S., Senior Resident

INTRODUCTION:

Dengue fever is a mosquito borne disease that is commonly found in the tropics . Denguevirus belongs to the Flavivirus genus of the family, Flaviviridae, and its members include the four antigenically-related serotypes of dengue virus (DENV 1–4). It is transmitted to humans by the bite of an infected female Aedes mosquito, usually the Aedes aegypti mosquito.

Dengue infection is characterized by an acute onset of fever associated with symptoms ofmalaise, sore throat, rhinitis and cough,headache, muscle ache, retro-orbital pain, jointpain, abdominal discomfort, and rash.Other clinical manifestations of dengue are related to the bleeding diathesis from thrombocytopenia.

Dengue infection is usually a clinical diagnosis but can be confirmed with laboratory tests based on the time of presentation; frequently used tests include polymerase chain reaction (PCR), and immunoglobulinM(IgM) or immunoglobulin G (IgG) enzyme immunoassays .

Since the beginning of the new millennium,there have been an increasing number of reports describing a myriad of ocular signs and symptoms associated with dengue fever .The precise pathophysiologic mechanism of dengue ophthalmic complications is not well understood; however, many studies have alluded to the possibility of an immune mediated process possibly associated with dengue serotyping as a likely mechanism .

In recent years,there has been a spurt of publications on Ophthalmic complications of Dengue fever in various articles. We tried to evaluate the same in our institute during an epidemic of dengue fever during the months of August 2012 to January 2013.

In this paper, we aim to review the ocular manifestations, utility of diagnostic tests, management, prognosis, and sequelae of dengue related complications.

MATERIALS AND METHODS:

A total of 86 patients were include in our study.Patients were referred to our OPD from a separate dengue ward set up for Dengue +ve patients in Depatment of Medicine, in our hospital following Ocularcomplaints.

Each patient had Visual acuity measured with snellens chart,complete Slit lamp examination was done for Anterior segment evaluation,Dilated fundus examination was done with Direct Ophthalmoscopy and findings confirmed byS/L biomicroscopy.Amsler grid charting was done to see for any scotoma. Visual field testing was done in patients who needed.

Patients excluded out of our study are

1.Paediatric patients (< 14 yrs)

2.Severely ill and those in shock , who needed intensive care set up.

RESULTS:

Total number of Dengue +ve patients during the epidemic =203 (by ELISA)

Number of patients who presented to our OPD with

Ocular complaints = 86

No of Male patients = 52 No of Female patients = 34

Mean age of presentation was 37 yrs (15 – 60 yrs)

Mean time interval of presentation was 7 days after onset of illness

Presenting complaints are as follows

Complaint	No of pts	Percentage
DV in BE	35	40.6%
Redness (i.eSCHge)	33	38.3%
Both DV And Redness	13	15.1%
Ocular pain	5	5.8%

In patients with C/O DV, Visual acuity ranged from 6/12 to CF 2 mts

Out of total 48pts with DV

20 pts had had non specific C/O eye strain, and some had near vision disturbance.

28 pts had significant posterior segment findings as below

Macular edema	15pts
Pan retinal vasculits with cotton wool spots	5 pts
Hyperaemic disc with slightly elevated disc margins	3pts
Macular haemorrage	2 pts
Chorioretinitis	2 pts

Vitritis	1pt

- All patients with significant posterior segment findings were followed on weekly basis initially and then depending on the response .

- 2 pts failed to follow up.
- Majority of patients required no treatment.Patients with severe fall of vision were treated with systemic steroids.
- Spontaneous resolution of maculopathy was seen upon recovery from thrombocytopaenia.Dry perifoveal pigmentary changes were seen in a case with intial episode of inflammatory chrioretinitis.
- All patients had resolution of symptoms with recovery of vision to preretinopathy levels with in 3 – 12 wks of follow up,except for mild central scotoma in few patients.

CONCLUSION:

- Ophthalmic complications were not typically reported in dengue infections in the past.
- A myriad of Ocular infections relate to dengue infection now a days.
- This typically affects young immunocompetent adults who often present at the nadir of thrombocytopaenia.
- The mechanism is unknown,but speculated to be immune mediated
- Prognosis is good with improved visual acuity and resolution of ocular signs in most patients without treatment.
- Some patients with severe visual impairment require steroid treatment.
- Further studies are needed to elucidate the mechanism to standardize investigations and determine the best form treatment.
- Ophthalmologists and physicians should be aware and vigilant towards patients with dengue related ophthalmic complications as a small minority of patients had poor visual acuity refractory to treatment in some studies.

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