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Prompt Diagnosis and Treatment of Presumed Viral Retinitis

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Abstract: *PURPOSE-Viral retinitis poses a clinical challenge which often results in poor visual outcome and may involve fellow eye too, if not treated early. METHODS- Retrospective interventional non randomised case series of 9 eyes of 6 patients (bilateral in 3 patients) who had acute vision loss ranging from 6/12- 1/60. All patients presented within 10 days except 1 eye showing up at 5 months. Thorough systemic work up for retinitis were done including Polymerase Chain Reaction (PCR) of the vitreous tap. Oral antiviral on day 1 of presentation for 3-6 weeks with titrated tapering doses of oral steroids added. RESULTS- Within 3 months, retinitis resolved in all eyes. 5 eyes had 6/6 vision, 2 had 6/12 due to cataract, 1 eye had 6/24 with macular edema due to late presentation. Only 1 eye had light perception due to optic neuritis, foveal thinning and retinal detachment at 6 months. CONCLUSION- Prompt diagnosis and early treatment of viral retinits can result in dramatic improvement of final visual outcome and prevent other eye involvement.*

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I. Introduction

Acute retinal necrosis (ARN) is potentially blinding necrotizing retinitis. It was first reported in 1971 by Urayama,[1–3] .Acute retinal necrosis (ARN) is a viral infection that is predominantly caused by varicella zoster(VZV)[4] and herpes simplex virus type 1 and 2 (HSV)[5-7], infrequently by cytomegalovirus[8] .It occurs mainly in immunocompetent patient but can occurs in the immunocompromised patient[9] . Diagnosis is mainly by clinical (that is triad of vitritis, retinal vasculitis and necrotising retinitis) and disease course not by the causative agent or immune status of patient[10]. Term 'BARN' for bilateral cases of ARN was first used by Young and Bird in 1978[11]. In BARN, ocular inflammation in the fellow eye occurs several days or weeks after onset in the initially affected eye[12-14].

Clinically ARN characterised by anterior uveitis andvitritis, patchy or confluent areas of retinal necrosis which is white or cream colored initially involving peripheral retina and extending posteriorly, and secondary retinal atrophy, which may lead to rhegmatogenous retinal detachment (RD). There is an occlusive vasculopathy involving the retinal and choroidal vasculature which leads to neovascularization and secondary vitreous hemorrhage..

It is an important cause of vision threatening posterior segment inflammation. Causes of poor visual outcome in ARN are RD and optic nerve or macular involvement by ischemic vasculopathy, macular hole formation, macular pucker. It is therefore necessary for the clinician to make early clinical diagnosis. Visual outcome is generally poor if diagnosed late due to its propensity to cause complications like retinal detachment.

Although the diagnosis of ARN is usually made onclinical grounds, but vitreous sample testing for antiviral antibodies[15-19] or Polymerase chain reaction for viral DNA[17,20] analysis is required to confirm the diagnosis.

Medical treatment include antiviral acyclovir[21] (newer antiviral oral famciclovir[22] and valacyclovir[23,24]) and systemic corticosteroids.

Argon laser retinopexy can be applied prophylactically posterior to necrotic retinal areas has shown some effect in reducing the rate of rhematogenous RD in ARN30–34.Vitrectomy surgery is usually performed for dense vitreous hemorrhage secondary to retinal neovascularization or RD.

II. Material And Methods

This retrospective interventional non randomised case series of 5 patients (8 eyes) was conducted in a Rajendra institute of medical sciences government hospital in India and included data from February 2014 to august 2015.Our all patients were presents within 1 month of onset except one patient who presented after 5 month.

Medical and demographic data, including presenting date, age, sex,medical history, initial symptoms, history of a herpetic infection, and all treatments were recorded. Visual acuity and clinical examination findings were recorded at presentation and subsequent follow-up periods. All the patients were immunocompetent.

They were underwent similar examination and blood investigation including PCR. Serial Fundus photo was captured at every visit for monitoring improvement. They were given oral valacyclovir 1 gm 3 times/day and after 2 days oral steroid was added in tapering doses after seeing mantoux.

III. Results

1 CASE-First patient presented with decreased vision in right eye 20/120 on 21-1-2015 since 1 month. We started oral valacyclovir 1gm TDS and advised basic blood test including mantoux and PCR. After 2 days, all the investigations were negative and advised oral steroid to patient. Review examination on 7-2-2015, his vision dropped to 20/200, then we increased the steroid dose.OCT showed increased inner segment and outer segment thickening with mild disruption. On 12-2-15, vision improved to 20/40, we maintained the tapering steroid dose. On subsequent followup on 19-3-15, his vision got 20/20 which was maintained for further 3 followup and no relapse occurred.

2 CASE- patient presented with decreased vision in both eye <1/60 since 10 days on 27-12-2014.He was advised blood investigation and started oral valacyclovir 1gm TDS and called after 2 days. On review PCR and Mantoux were negative, oral steroid was started in tapering doses. Patent was reviewed every 2 weeks and there was linear improvement in his vision ,and was advised to follow the same treatment schedule. On 17-3-15,his vision improved to 20/80 in both eyes and vision was not improving with pinhole due to cataract formation.

3 CASE-Patient presented with decreased vision in both eyes since 4 days,right vision -20/60 and left eye –HM. Patient was advised same investigation and started oral valacyclovir and oral steroid added after 2 days after reading mantoux. On subsequent followup for 2 visits his vision was deteriorating, in right eye dropped to 2/60 and in left eye dropped to PL. On june 15,his RE vision was improved to 20/20 and in LE vision was PL present. OCT showed macular thinning in LE. After 1year his RE was 20/20 but LE with PL present showed tractional retinal detachment with PVR changes for which he underwent retinal detachment surgery with silicone oil .

4 CASE- A patient presented to us with complaints of
redness in the right eye for 5 days with BCVA 20/200. ARN was suspected by ophthalmologic examination. Treatment with oral valacylovir (1000 mg/day) and oral prednisolone (35 mg/day) was started after reading mantoux test. Systemic administration of antiviral and prednisolone was continued . The final BCVA in the right eye was 20/20 at that time.

5 CASE- A Patient referred to our department for ocular pain and blurred vision in the both eye starting 8 days earlier. BCVA was 20/50 in the right eye and 20/40 in the left eye. In the right eye, optic disc hyperaemia and oedema, and retinal haemorrhage along the whitish vessels and yellowish lesions were observed in the peripheral retina. In left eye posterior synechiae and old peripheral retinal degeneration with few active necrotic lesions were observed. Treatment with oral valacyclovir (1000 mg/day) and oral steroid was started after negative mantoux test. Final BCVA in both eye improved to 20/20 after 8 weeks of treatment.

6 CASE- A patient complaining of floaters and recurrent attack of redness with ocular pain for 5 months in the left eye. BCVA was 20/20 in the right eye and 20/40 in the left eye. A dense white retinal lesion was observed in the temporal peripheral retina. ARN was suspected and treatment with valacyclovir (1000 mg/day) and oral steroid was started and continued for 12 weeks. Laser photocoagulation around the retinal lesion was also performed. The retinal lesion diminished with the treatment and but visual acuity was unchanged due to chronic macular edema.

IV. Discussion

Our all patient were immunocompetent and responded well with treatment except one who presented to us after 5 month of onset. So, start of early treatment is important instead of waiting for lab reports. All of our PCR data for HSV were negative. Early treatment also decreases chance of other eye involvement as non of our patient had other eye involvement.

Rupak Roy et al reported ARN is a fulminant disorder, which if treated early and aggressively gives good results in his retrospective study of 62 eyes of 53 patients. Joanne L Sims et al reported Acute retinal necrosis still has poor visual prognosis. Early diagnosis and initiation of treatment may improve outcome in 22 consecutive patients (23 affected eyes).

Limitation of our study

- All patient were diagnosed on clinical background.
- Retrospective case series.
- Small sample size.
- All patients were negative for PCR.

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