



ROLE OF 3 CONSECUTIVE DOSES OF INTRAVITREAL RANIBIZUMAB AT 1 MONTH INTERVAL IN IDIOPATHIC CHOROIDAL NEOVASCULAR MEMBRANE: A RETROSPECTIVE STUDY

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ABSTRACT

AIM: To see the effect of 3 consecutive doses of intravitreal Ranibizumab(0.5 mg) at 1 month interval under topical anaesthesia in idiopathic choroidal neovascular membrane.

METHODOLOGY: 10 patients with idiopathic choroidal neovascular membrane(CNVM) were taken into our study from march 2016 to february 2019 and after proper history taking and detailed systemic and ophthalmological examinations including best corrected visual acuity(BCVA) and central macular thickness(CMT) measurement by spectral domain OCT we had injected Ranibizumab(0.5 mg) intravitreally under topical anaesthesia for 3 consecutive months and BCVA and CMT were measured at 3 months, 6 months, 9 months, 12 months after 1st dose of injection respectively. Then paired T test was applied with the help of SPSS software.

CONCLUSION: Intravitreal Ranibizumab can be a safe and effective tool to handle idiopathic CNVM but long term prospective trials are mandatory to draw the conclusion.

KEYWORDS

CNVM= Choroidal neovascular membrane, BCVA = best corrected visual acuity, CMT= central macular thickness, OCT= ocular coherence tomography.

INTRODUCTION:

Choroidal neovascular membrane is a pathological growth of abnormal neovessels into subretinal space. Although peripapillary choroidal neovascular membrane(CNVM) is a rare phenomenon, it can be caused by several conditions like age related macular degeneration(AMD), idiopathic, multifocal choroiditis, angioid streaks, histoplasmosis, choroidal osteoma, optic disc drusen, congenital disc anomalies, sarcoidosis(1). Idiopathic CNVM occurs in young patient without any apparent causes(2). The mainstay treatment options include green laser photocoagulation or photodynamic therapy(3,4) but anti-VEGFs are other good treatment modalities to tackle the situation. Some case reports and case series have shown its efficacy in peripapillary CNVM(5-10), but long term beneficial effects remained doubtful. But unlike AMD, there is no definite treatment protocol for idiopathic CNVM.

Our main purpose in this study is to evaluate the effect of 3 consecutive doses of intravitreal Ranibizumab in idiopathic CNVM..

METHODOLOGY:

We have conducted this hospital based nonrandomised retrospective interventional study from march 2016 to february 2019 in Malda Medical College, West Bengal, India. Here 10 patients were selected.

Exclusion criteria:

- (1) Old age group(age more than 50 years) with multiple drusen.
- (2) Retinal pigment epithelial(RPE) changes.
- (3) Healed choroiditis.
- (4) Central serous retinopathy(CSR).

After detailed history taking about onset of dimness and nature of its progression and associated pain, photophobia if any, all 10 patients underwent detailed ophthalmological examinations including best corrected visual acuity(BCVA) using Snellens chart, intraocular pressure measurement by Goldmanns applanation tonometer, fundal evaluation by indirect ophthalmoscope and 78D lens, 90D lens. After that all patients undergone all the investigations required to rule out any underlying infective and inflammatory disorders(TC, DC, Hb, ESR, c-ANCA, p-ANCA, serum ACE, RA factor, TORCH titres, VDRL, HIV, serum calcium.). Then spectral domain optical coherence tomography (OCT) and digital fundus fluorescence photography (DFA) were advised to all patients to see the nature and extent of membrane. Then after proper informed consent and institutional clearance we had injected Ranibizumab(0.5 mg) intravitreally under topical anaesthesia for 3 consecutive months at 1 month interval. BCVA, detailed fundal evaluation and SD OCT were repeated 3 months, 6 months, 9 months and 12 months after 1st dose of injection respectively. Mainly central macular thickness(CMT) were recorded

via OCT readings. Normal CMT was regarded as 250 micron and clinically significant improvement after therapy was regarded when CMT was less than 300 micron after 12 months of 1st dose of injection. Here paired T test was performed with the help of SPSS software to get the statistical data.

RESULTS:

Out of 10 patients 8 were male and rest were female and all were in the age range of 25- 35 years . Among them, 7 showed significant improvement in terms of CMT reduction whereas 3 patients remained refractory to above regimen even 12 months after 1st dose which indicated that they needed further injections to get the disease process under control. Following data are obtained from the statistical analysis:

Paired T test values in relation to CMT (Total patient 10):

Before intervention:

Mean before intervention	445.1
S.D before intervention	31.418

After intervention:

	After 3 months	After 6 months	After 9 months	After 12 months
Mean after intervention	396.8	363.7	332.4	310.4
S.D after intervention	33.689	26.773	31.081	26.016
P value	<0.05	<0.001	<0.001	<0.001

The above table clearly depict that after 3 doses of intravitreal Ranibizumab injections, CMT reduction was clinically significant as shown by p values <0.05, <0.001, <0.001, <0.001 3months, 6 months, 9 months and 12 months after 1st injection respectively.

OCT PICTURE OF A PATIENT

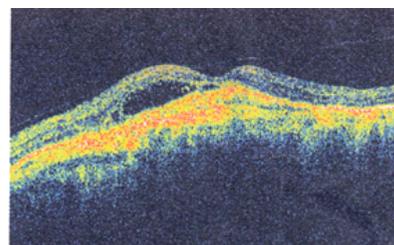


FIG 1: PATIENT BEFORE INTERVENTION (CNVM and cystoid spaces around macula)

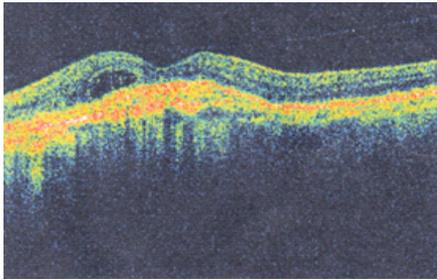


FIG 2 PATIENT AFTER 3 MONTHS: (CNVM regresses too some extent and cystoid spaces reduced partly)

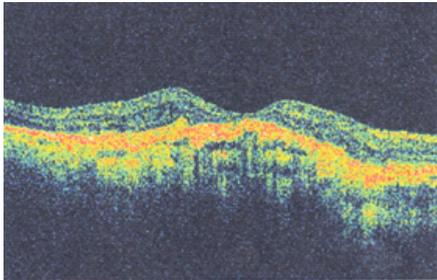


FIG 3 :PATIENT AFTER 6 MONTHS (Cystoid spaces resolute largely)

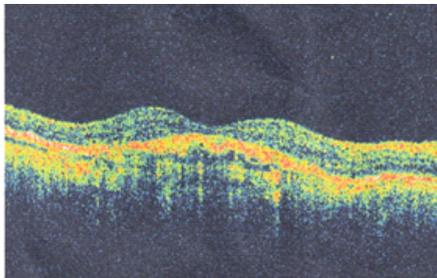


FIG 4 :PATIENT AFTER 12 MONTHS (CMT thickness reduced and cystoid spaces disappeared)

DISCUSSION AND CONCLUSION:

Owing to its asymptomatic nature in most cases, idiopathic CNVM is often dealt with conservative approach. When fovea is involved, urgent intervention is required. Despite lack of definitive treatment protocol for idiopathic CNVM, intravitreal anti-VEGF therapy is a lucrative option.(11). Even though our study contained very short number of patients, 70% patients showed improvement in BCVA and decrease in CMT through OCT pictures. But failure of inactivation and reactivation are two major threats to above intravitreal anti-VEGF therapy. So prospective trials of longer duration and large number of patients are demanded to stamp the definitive role of intravitreal anti-VEGF therapy specially Ranibizumab in idiopathic CNVM.

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