



A DESCRIPTIVE OBSERVATIONAL STUDY ON BRANCH RETINAL VEIN OCCLUSION AND DYSLIPIDEMIA IN A TERTIARY CARE HOSPITAL IN EASTERN INDIA

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ABSTRACT

Branch Retinal Vein Occlusion is the most common type of Retinal Vein Occlusion prevalent globally. BRVO is twice as more common than CRVO. In India approximately 0.66% of the population has been diagnosed with BRVO. Estimating proportion of persons having Dyslipidemia in Branch Retinal Vein Occlusion (BRVO) in ocular fundus examination. **Study Design** : Descriptive Observational Study. **Methods**: Total 182 persons examined, 73 females & 109 males. The fundus examined after pupillary dilation using Tropicacyl Plus eyedrops. Fundus examination done using Slit Lamp Biomicroscope with +90D lens & Indirect Ophthalmoscope with +20D Lens. Those with BRVO suggested to get Serum Lipid Profile tested. **Result** : Out of 182 persons examined, 95 were found to have serum lipid profile reports suggesting Dyslipidemia which estimates to be 52.2% of the number of persons diagnosed with BRVO. Out of those 95 persons, 32 are females (33.7%) and 63 are males (66.3%). **Conclusion**: Dyslipidemia in 36.8% of persons suggest a potential role in causing BRVO. Dyslipidemia can be controlled with lifestyle modifications & appropriate medications, so such persons should be encouraged to follow the advice properly.

KEYWORDS : Branch Retinal Vein Occlusion, Dyslipidemia, Lipid profile, Ophthalmoscope.

Introduction

Branch Retinal Vein Occlusion is the most common type of Retinal Vein Occlusion prevalent globally. BRVO is twice as more common than CRVO. In India approximately 0.66% of the population has been diagnosed with BRVO. Most commonly BRVO is seen in the Superotemporal Quadrant of the Retina, closer to the optic disc, possibly due to compression of the vein at the arterio-venous crossing where they share a common adventitial and glial sheath. Any atherosclerotic change of arteries may lead to venous occlusion. The visual acuity at presentation and the prognosis depends largely on whether the macula has been involved. The ocular fundus shows features of sectoral superficial intraretinal hemorrhages, cotton wool spots or edema at macula. The Virchow's Triad is believed to be the basis of any veno-occlusive disease. BRVO is thought to be a result of many modifiable and non-modifiable risk factors including familial history, systemic vascular diseases, certain medications.

Materials and Methods

AIM:- To estimate the proportion of patients having dyslipidemia at the time of diagnosis with BRVO in ocular fundoscopic examination. This was a Descriptive Observational Case Series study. Total of 38 individuals who presented with sudden painless blurring of vision of either sex, at the Ophthalmology OPD of a Tertiary Level Hospital who were clinically diagnosed with BRVO, over a period of 6 months duration, were included.

Inclusion Criteria:

a) Patients who provided informed consent (b) patients of any age (c) patients presenting with sudden painless blurring of vision

Exclusion Criteria:

a) known history of long-standing dyslipidemia under treatment (b) concurrent systemic comorbidities (c) history of OCP in women (d) history of vaso-occlusive disorder.

Necessary clearance from Institutional Ethics Committee was taken and informed consent obtained from all the study participants. All the case details, history and clinical examination data that were recorded were entered in prescribed case record proforma and saved for analysis. After the Best Corrected Visual Acuity (BCVA) and the Pupillary light reflex was noted for every participant, both the eyes of every study participant were dilated with E/D Tropicamide 0.8% + Phenylephrine 5%. After adequate pupillary dilatation was achieved, the ocular fundus was examined by Indirect Ophthalmoscope +20D Lens and with Slit Lamp Biomicroscopy & +90D Lens. The ocular fundus findings were recorded as superficial/deep intraretinal hemorrhages, part of the retina involved, any exudates or cotton-wool spots, presence of any vascular anomaly. The study participants who were clinically diagnosed with BRVO were then further counselled to

get laboratory investigations for Serum Lipid Profile done at the earliest and follow-up with reports. All the study participants who were found to have Dyslipidemia were then further counselled to seek management for Dyslipidemia, and the prognosis of BRVO was explained, and were encouraged to attend the Ophthalmology OPD for follow-up.

The normal reference range followed for serum lipid profile according to NCEPATP III guidelines:

- i) Total Cholesterol <200mg/dl
- ii) Total Triglycerides <150 mg/dl
- iii) HDL <60 mg/dl
- iv) LDL <100 mg/dl

The laterality, severity and prognosis were all recorded in details and further management was planned accordingly for each individual.

Result

A descriptive observational study was conducted in a tertiary care hospital for a duration of 6 months. A total of 182 patients who were diagnosed with BRVO, included in the study out of which 95 people were found to have deranged lipid profile values.

The various clinical fundus morphology that was documented, superotemporal branch vein was involved in 110 patients (60.5%) and inferotemporal branch vein occluded in 72 patients (39.5%). Macula was involved in 87 patients (47.8%).

On chi-square test, the p value for branch retinal vein occlusion and dyslipidemia was $p < 0.05$, which was significant. For macular involvement relationship with dyslipidemia the result for p was not conclusive.

Discussion

In this study it is found that the most cases of BRVO are diagnosed in the 40-60 years age group and second most in the 80-90 years age group with proportion of 60.5% and 23.7% respectively, which goes along with various world-wide studies. Most of the BRVO that was diagnosed involved the supero-temporal quadrant of the ocular fundus which amounts to 60.5%, which agrees to the most probable pathogenesis factor of venous compression in common AV adventitial sheath. Majority of the diagnosed study participants were males, which is most commonly seen as they seek medical care earlier than females, and also their lifestyle habits, dietary habits contribute to the etiopathogenesis. It was also observed that 52.2% of the study participants were diagnosed as having Dyslipidemia, which is similar to studies conducted by Aggarwal et al, Sheikh K M et al.

Conclusion

BRVO is a potentially vision threatening disease depending on the

severity and the area of the fundus involved. When the BRVO involves the macula causing macular edema and exudation, the visual acuity can be poor (<6/60) with associated metamorphopsia. Dyslipidemia has been documented as an important risk factor and etiology for developing BRVO in middle-age to elderly people. Since routine health check-ups and blood investigations are still ignored by most people in our country, undiagnosed dyslipidemia may present for the first time with complaints of sudden, painless dimness of vision due to BRVO which is clinically found on fundus examination. Prompt management with individualized and severity specific treatment modalities can drastically improve the visual prognosis. The systemic risk factors like dyslipidemia, hypertension, clotting disorders, have to be simultaneously controlled with proper medications, dietary modifications and lifestyle changes, to prevent any further deterioration or affection of the fellow eye.

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