



Retinal Venous Occlusion in concern with risk factors in Rural Areas of Uttar Pradesh

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ABSTRACT

Retinal vein Occlusion (RVO) is the second most common Retinal Venous disorder [1, 2, 3] and mostly affects the patients in 4th and 5th decade. The most important risk factors for RVO are systemic vascular disorders like Hypertension, Arteriosclerosis, Hyperlipidemia and Diabetes[4, 5].

Aim: To study the association of RVO with systemic disorders (hypertension, dyslipidemias including hyperlipidemias and diabetes) in a tertiary care hospital in rural setting.

Results: The study was conducted on 234 patients of RVO who visited retina clinic. Mean age of the patients was 46+5.6 years. Age (mean age= 49+3.7 years and sex (M:F=4:5) matched 250 controls were taken. RVO was most commonly associated with hypertension i.e. 70.51% (n=165) which was about 20% more than in control group (50.40%, p=0.05). Diabetes was present in 14.95% (n=35) of RVO cases which was about 10% more than in the control group (n=12; p value=0.01).

Dyslipidemias were present in 28.20% (n=66) cases with RVO which was 12.5% more than in the control group (n=39, p value=0.01).

Conclusions In the present study, hypertension, diabetes and hyperlipidemia were present in 70.51%, 14.95% and 28.20% cases of RVO respectively. RVO can thus be prevented by primary prevention and control of these risk factors with early diagnosis and treatment.

KEYWORDS : CRVO central retinal vein occlusion, BRVO branch retinal vein occlusion

INTRODUCTION

After diabetic retinopathy, retinal vein occlusion (RVO) is the second most common Retinal Vascular disorder^[1,2,3] and mostly affects patients in their 4th and 5th decade. The prevalence of RVO ranged from 0.6% to 1.7% in a study of middle aged and older adults^[10]. It does not have any sex predilection and incidence increases with the age.^[1,2,3] The most important risk factors for RVO are systemic vascular disorders like hypertension, arteriosclerosis, hyperlipidemia and diabetes.^[4,5]

Retinal Vein Occlusion is divided into Central (all the 4 quadrants are involved), Hemi (Only superior and inferior quadrant involved) and Branch Retinal Vein occlusion with further subdivision into non ischemic and ischemic types. BRVO is further divided into Major BRVO, Macular BRVO and Peripheral BRVO. Mostly ischemic type develops blinding macular oedema, ischemic maculopathy and neo vascularization. Leiberich showed its clinical appearance 1st and Hayreh described "venous stasis retinopathy" for milder forms and "hemorrhagic retinopathy" for more severe forms^[6,7].

Recent studies showed that 48% of RVO is attributed to hypertension, 20% to hyperlipidemia and 5% to diabetes^[9].

As these systemic risk factors are also associated with increased risk of RVO in the fellow eye^[11]. So we plan to study the association of

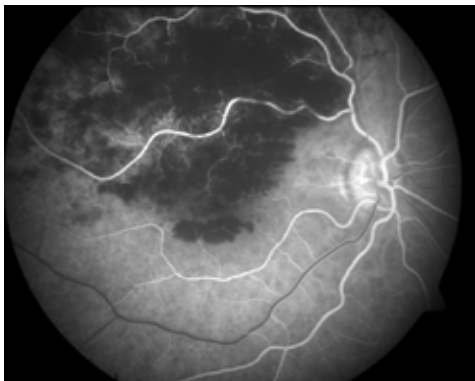
RVO with systemic disorders hypertension, diabetes and dyslipidemias including hyperlipidemias in a tertiary care hospital in the rural setting.

Material and Methods: This study was conducted in the department of ophthalmology between march 2012 to march 2015 on 234 patients who presented in the retina clinic and diagnosed with any form of retinal veno-occlusive diseases (i.e. having retinal vascular tortuosity, retinal hemorrhages, hard exudates, cotton wool spots, optic disc swelling and macular edema). The informed consent of the patients and due permission of ethical committee was taken. 250 willing patients above 40 years of age having normal looking fundus were included in the study as control through routine fundus examination. Pregnant and lactating women were excluded from the study.

Complete local examination including anterior segment evaluation and funduscopy /Fluorescein Angiography was done (Figures 1,2,3,4).



Fig(1) showing fundus photograph of superior-temporal branched retinal vein occlusion



Fig(2) showing FFA of superior-temporal branched retinal vein occlusion



Fig(3) Fundus photograph of central retinal vein occlusion showing dilated tortuous retinal veins with retinal



Fig(4) showing FFA of central retinal vein occlusion

Systemic examination was done and detailed history of DM, HTN, CHD and dyslipidemia were taken. Patients with BP greater than 140mmHg systolic and 90mmHg diastolic ,LDL level greater than 100mg%,Total cholesterol greater than 200mg% , HDL less than 40mg% and patients with blood sugar fasting greater 110mg% and 2hrs post prandial greater than 200mg% or patients already on treatment were included in the study .

Results:Mean age of cases was 46 ± 5.6 years and control group was 49 ± 3.7 years .M: F ratio was 4:5 in both the group. Chi –square test was applied for statistical analysis. 70.51%(n=165) patients of RVOhad systemic hypertension (BP greater than 140/90 mm of Hg) which was 20% more than in the control group i.e 50.40%(n=126; p value=0.05). Diabetes was present in 14.95 % (n=35) of RVO cases which was about 10% more than in the control group (n=12; p value=0.001).

Dyslipidemias were present in 28.20%(n=66) cases with RVO which was 12.5% more than in control group (n=39; p value=0.01).

Discussion: Retinal vein Occlusion is the second most common retinal venous disorder^(1, 2, 3). Management of this disorder is controversial.In our study, association between RVO and systemic hypertension, diabetes and dyslipidemia (p value=0.05; 0.001; 0.01 respectively) is establishedh.Retinal venous occlusive disease was found to be most commonly associated with systemic hypertension.

EDCC study found that patients with diabeteswere at increased risk of CRVO⁽⁴⁾.A study showed that increased duration of diabetes is associated with increased incidence of RVO⁽⁸⁾.

Increased levels of cholesterol have been linked to CRVO^(14,15) ,while higher level of HDL reduces the risk of BRVO by about 50%⁽¹³⁾.

Systemic hypertension, diabetes and dyslipidemia adds on to arterial compression and venous endothelial damage which may leads to intravenous thrombus formation thus increasing the risk of vascular events. Risk in fellow eye for ischemic CRVO is 5.6% , non-ischemic CRVO is 6.6% ,non-ischemic major BRVO risk is 3.4% within 2 years and for non –ischemic HCRVO risk is 3.5% within 2.2 years. Within 4 years the risk of non – ischemic CRVO is 7.7%, non –ischemic BRVO risk is 6.6% in the fellow eye. Earliest within 1 year i.e. 0.4 years ,Ischemic HCRVO develops in 7.4% and Macular BRVO in 4.0% at 3.3years⁽¹¹⁾.If proper screening is done and contributing risk factors like hypertension, diabetes, glaucoma, lipid abnormalities, hyper viscosity cardiovascular diseases are reduced then risk in the fellow eye reduces significantly⁽¹²⁾.

Conclusions

Complex retinal vascular disorders are mostly associated with treatable systemic disorders like hypertension, diabetes and hyperlipidemia and their presentation at an early age may leads to severe visual impairment. In developing countries, the risk factors like diabetes, hypertension, hyperlipidemia, cigarette smoking, glaucoma, vasculitis and hyper viscosity diseases are on rise thus increasing the risk of RVO. Prevention of risk factors as early as possible with early diagnosis and treatment, RVO can be prevented. By controlling these systemic risk factors one can reduce theburden of systemic morbidity thus improving the longevity and quality of life.

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