Journal of Cardiovascular Disease Research
ISSN:0975 -3583,0976-2833 VOL14, ISSUE 01, 2023

Epidemiological Study of Retinal Vein Occlusion and Various risk factors in Tertiary Centre in Garhwal Himalayan Region

Type of article- Original

1. Dr Achyut N Pandey
Associate Professor Dept of Ophthalmology, VCSGGIMSR,Srinagar garhwal
2. Dr Shweta Sharma
Assistant professor Dept of Ophthalmology, VCSGGIMSR,Srinagar garhwal
4. Dr Manoj Tyagi
Associate Professor Dept of Ophthalmology, GMC Datiya, MP
5. Dr Prateek Kaul
Assistant professor Dept of Ophthalmology, VCSGGIMSR,Srinagar garhwal
Corresponding author
Dr Shweta Sharma
Assistant Professor Dept of Ophthalmology, VCSGGIMSR,Srinagar garhwal
9456792024
achyutpandey@gmail.com

INTRODUCTION

Occlusive occlusion disorders together form the most common cause of visual impairment. Before a disease can be managed, it is essential to understand its natural history in order to assess the likely effectiveness of any intervention.

Retinal vein occlusion (RVO) is the most common retinal vascular occlusive disorder and is usually associated with variable visual loss. RVO is the second most common retinal vascular disease after diabetic retinopathy. Affected 16.4 million adults worldwide. Early recognition is important because complications cause significant ocular morbidity.

Keywords: Ocular ischemia; Optic nerve; Retinal blood flow; retinopathy; Stroke.

OBJECTIVE: To analyze the incidence and prevalence in a tertiary care center, identify risk factors and clinical presentation of retinal vein occlusion.

METHOD: This study was a hospital-based observational study conducted in an ophthalmology department at a tertiary care hospital in the Garhwal Himalayan region over a 12-month period. Eye OPD patients with a clinical diagnosis of RVO underwent a comprehensive ophthalmological examination including FA. Biochemical investigations were performed to identify associated systemic diseases. The study is conducted with the approval of the institutional ethics committee.

RESULT: The following observations were made. In our study, the incidence of RVO was 0.775/1000 with a prevalence of 1.075/1000 cases. CRVO is approximately 1.71 times more frequently reported than BRVO and 12 times more frequently than HRVO in our hospital. The average age of patients with RVO was 53 years, with a predominance of men. Hypertension was the most prevalent risk factor, present in less than half of patients. This is followed by DM in one third of patients, followed by dyslipidemia, hyperhomocysteinemia, and OAG in decreasing frequency. . Many patients had more than one identifiable risk factor. 80% of patients had impaired vision. In our study, the left eye was affected more often than the right.

TABLE 1:

OCCURRENCE OF RVO AND SUBTYPES IN TERTIARY HEALTHCARE

TABLE 1:

PREVALENCE OF RVO AND SUBTYPES IN TERTIARY HEALTH CENTER

Disease	Number	Percentage
CRVO	36	60 %
BRVO	20	35%
HRVO	3	5%

ISSN:0975 -3583,0976-2833 VOL14, ISSUE 01, 2023

TOTAL	59	100%

60% of patients with RVO have CRVO, 35% have BRVO, and 5% have HCRVO.

TABLE 2

AGE-WISE DISTRIBUTION OF RVO

Years	BRVO	CRVO	HRVO
31-40	2	3	–
41-50	3	7	–
51-60	4	12	2
61-70	6	9	1
71-80	5	4	–
81-90	0	1	–
TOTAL	20	36	3

Mean age of RVO patients was 53 yrs with maximum no. of cases reported between the age of 51-70 years of age.

TABLE 3:

SEX-WISE DISTRIBUTION OF CRVO

Sex	BRVO	CRVO	HRVO
MALE	9(45%)	24(67%)	3(100%)
FEMALE	11(55%)	12(33%)	–
TOTAL	20	36	3

In our study males (61%) were more reported than females (39%)

TABLE 4:

RISK-FACTORS IN RVO

RISK- FACTOR	RVO	Percentage
HYPERTENSION	25	42
DIABETES MELLITUS	18	30
DYSLIPIDEMIA	11	18
HYPERHOMOCYSTEINEMIA	6	11
GLAUCOMA	5	9
CAD	2	3

ISSN:0975 -3583,0976-2833 VOL14, ISSUE 01, 2023

CVA	2	3
OCP	2	3
SUBSTANCE ABUSE	2	3
NO RISK FACTOR	1	2

TABLE 5:

SYMPTOMS IN RVO

Symptoms	No	Percentage
DOV	47	79.67
VF DEFECTS	5	8.47
FLOATERS	5	8.47
ASYMPTOMATIC	5	8.47

TABLE 6:

LATERALITY IN BRVO

	BRVO	CRVO	HRVO
OD	9	15	1
OS	11	21	2

P=0.9211

TABLE 7:

QUADRANT INVOLVED BRVO

Quadrant Involved	No	Percentage
ST	10	52
IT	8	40
SN	4	20
IN	2	10
Multiple BRVO	3	20

TABLE 8;

DISTRIBUTION OF RVO ACCORDING TO PERFUSION STATUS

Type	BRVO	CRVO	HRVO
Ischemic	16 (81.48)	20(56)	3(100)
Non Ischemic	4 (18.52)	16(44)	-
Total	20 (100)	36 (100)	3

ISSN:0975 -3583,0976-2833 VOL14, ISSUE 01, 2023

DISCUSSION:

Hypertension was the most prevalent risk factor, present in less than half of patients. DM, dyslipidemia, hyperhomocysteinemia and OAG follow in decreasing frequency. Hypertension causes chronic damage to the endothelium, stimulates the prothrombotic activity of the endothelium and thereby initiates and accelerates atherosclerosis. Also, hypertension disrupts laminar blood flow, causing platelets to come into contact with the injured prothrombotic. A similar association was reported by S.L.Teoh & K.Amarjeet (1993) in their retrospective study. endothelium. In our study, 9% of cases had glaucoma. Anatomical variations at the level of the lamina cribrosa are important in the development of CRVO. Within the retrolaminar portion of the optic nerve, the CRA and CRV are aligned parallel to each other in a common tissue sheath. The CRA and CRV are naturally compressed as they pass through the rigid mesh openings in the lamina cribrosa. As the IOP increases, mechanical stretching of the lamina occurs, which can cause subsequent arching of the lamina and consequent impact on the central retinal vein. The superotemporal quadrant is most commonly seen in patients with BRVO. Thapa (2010) A hospital case control study found 63.9% branch retinal vein occlusion in the superotemporal.

CONCLUSION:

RVO causes significant ocular morbidity with a proportion of 0.09%, with CRVO being more common than BRVO in a tertiary center. There is a significant association with increasing age. Hypertension was the most prevalent risk factor in patients with RVO, followed by diabetes and dyslipidemia, so a better understanding of the medical conditions associated with these diseases may have implications for the patient's overall health.

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