Visual Outcomes of Retinal Vein Occlusion in Patients Younger than 50 Years of Age

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Introduction

- Retinal vein occlusion (RVO) is a common vascular retinal disorder due to occlusion of the retinal vein system.
- RVO is a prominent cause of loss of vision worldwide.

- RVO is classified into two types: Branch (BRVO) and Central (CRVO), seen in Image 1.
- CRVO is an occlusion of the main retinal vein posterior to the lamina cribrosa of the optic nerve. BRVO is a blockage of one of the tributaries of the central retinal vein.

- Significant risk factors for RVO include age and male gender.
- Others include conditions which disturb Virchow's triad; such as hypertension, hyperlipidaemia and diabetes.

- RVO mostly affects those over 50 years of age.
- 63.8% of over 18 year olds are overweight or obese, many have diagnoses inducing a hyper-coagulable state including inherited conditions such as thrombophilia.
- Therefore it is unsurprising younger patients are also affected by RVO.
- The data supports when comparing the incidence of central RVO in patients younger than vs older than fifty years of age (0.23/1000 vs 1.95/1000).

Purpose

- To evaluate real world visual outcomes of RVO.

Methods

- A retrospective study of acute RVO eyes diagnosed in patients younger than 50 years over an 82 month period with at least 1 year follow-up.

- Review of the clinical records yielded demographics, best corrected visual acuity (BCVA) at presentation and at follow-up, management and complications.

- Visual acuity (VA) measured in LogMAR. A LogMAR score of 2.0 for counting fingers and 3.0 for those who can only detect hand movements is widely accepted and therefore used in this study.

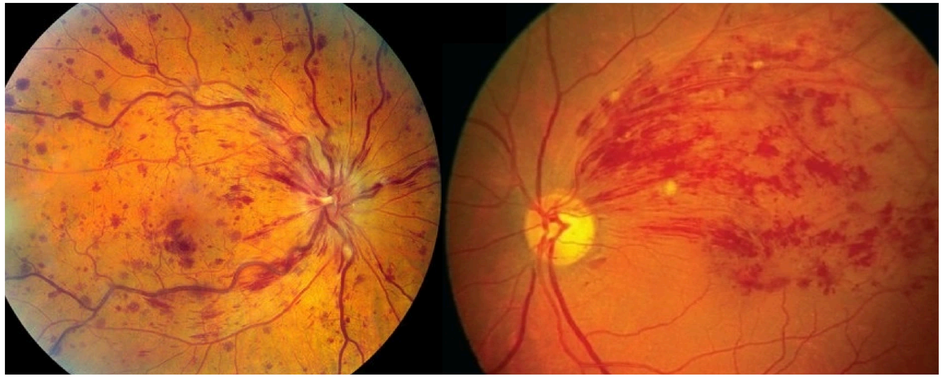


Image 1: CRVO vs BRVO Fundus imaging

	CRVO (n=10), n(56%)	BRVO (n=8), n(44%)
GENDER		
Male	6 (60%)	6 (75%)
Female	4 (40%)	2 (25%)
Age		
35-39	4 (40%)	0 (0%)
40-44	5 (50%)	4 (50%)
45-49	1 (10%)	4 (50%)

Table 1: Patient Demographics. CRVO, Central Retinal Vein Occlusion; BRVO, Branch Retinal Vein Occlusion

Patients with >3 months without treatment	All (n=18)	CRVO (n=10)	BRVO (n=8)
Mean number of Anti-VEGF injections	5.2	5.6	4.6
Mean number of Ozurdex implants	0.2	0.2	0.1
Mean number of pan-retinal photocoagulation	0.3	0.2	0.5

Table 2: Management

Results

- 18 patients under 50 years of age were identified with RVO in the audit period (*Table 1*).
- 8 Branch RVO (BRVO) and 10 Central RVO (CRVO).
- Patient demographics are summarised in Table 1.
- The management of the patients is summarised in Table 2.

- CRVO group:
  - Mean logMAR VA improved from 0.94±0.52 to 0.32±0.27
  - 2 required sectoral pan-retinal photocoagulation (PRP).
  - 2 required Ozurdex implants.
  - 1 experienced raised intra-ocular pressure secondary to steroid response.

- BRVO group
  - Mean logMAR VA 0.68±0.38 to 0.69±0.67. However, exclusion of the significant outlier (3.0= hand movements) would yield 0.36±0.32.
  - 4 required sectoral pan-retinal photocoagulation (PRP) for ischaemia.
  - 1 required Ozurdex implant.

There were no cases of neovascular glaucoma in either group.

Conclusion

- The visual outcomes of our CRVO group exceeded standards set by The Royal College of Ophthalmologists in their 2021 RVO Guidance Document. However a significant outlier, coupled with a small sample size led to our BRVO group failing to attain this.

- Real world improvements in VA of acute RVO eyes undergoing treatment can be less than those in randomised controlled trials.

- Limitations include small case number.

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Image 1: Credit to Dr David Goldemund M.D.