

Ophthalmology Times

Research Scholar

Honoree Program

Use of the Ischemic Index on Widefield
Fluorescein Angiography to Characterize a
Central Retinal Vein Occlusion as Ischemic or
Non-Ischemic

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FINANCIAL DISCLOSURES:

None

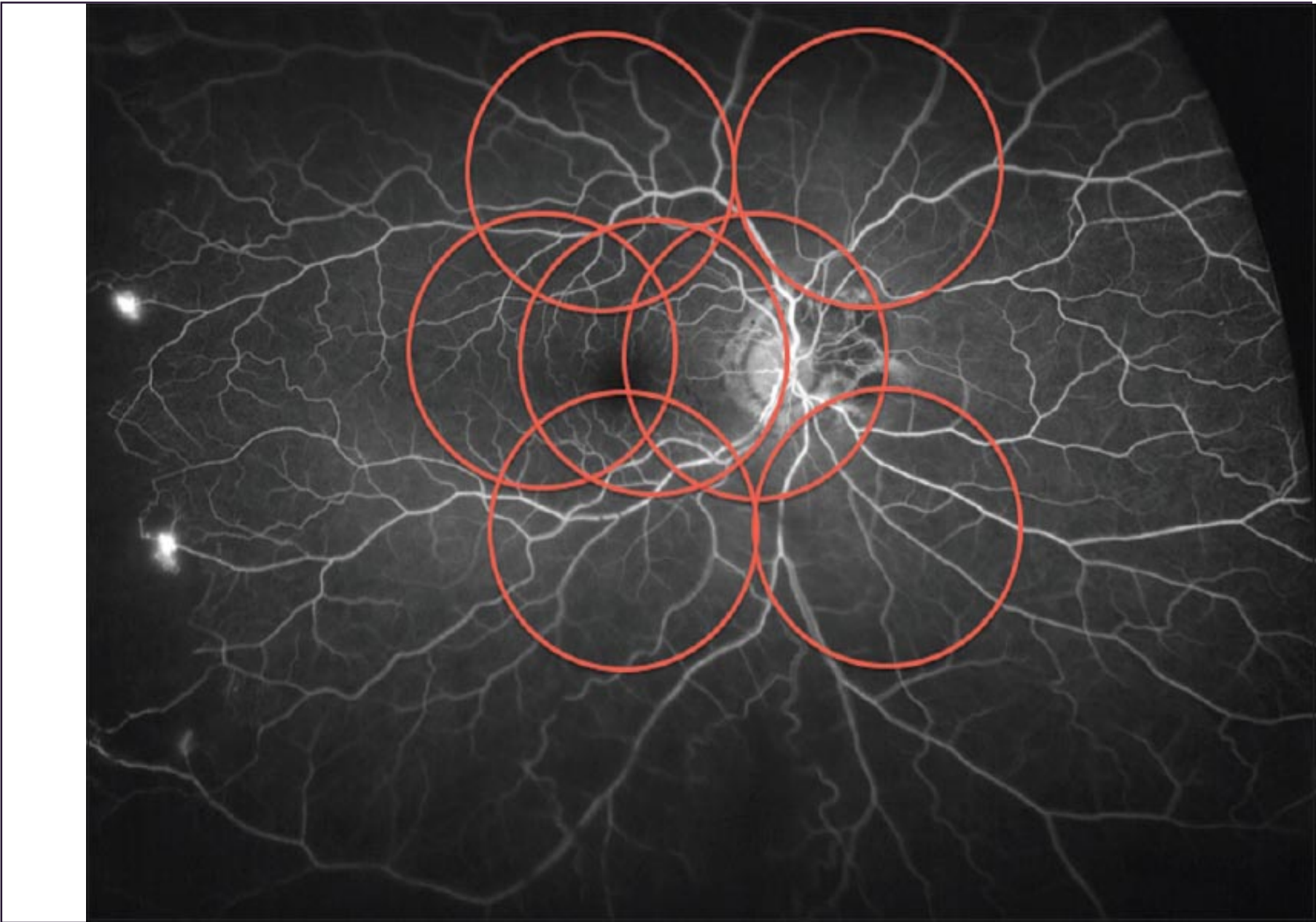


MY ROLE IN THIS RESEARCH:

- ✓ Conception and design of the work/project
- ✓ Acquisition of data
- ✓ Analysis and interpretation of data
- ✓ Creation and critical review of the presentation



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BACKGROUND

- Criteria to classify a CRVO as ischemic vs. non-ischemic unclear
- Risk stratification based on CVOS data based on non-widfield FA
- Ultra-widfield FA (UWFA) starting to be used in clinical trials for retinal vascular disease



PURPOSE

- To examine if extent of non-perfusion can help with classification of CRVO (ischemic vs. non-ischemic)
- To examine if extent of non-perfusion at baseline can predict risk of conversion to ischemic CRVO



METHODS

- Retrospective single center study of all patients diagnosed with CRVO over a 7 year period
- Inclusion criteria
 - Treatment naïve
 - UWFA performed at baseline visit
 - ≥ 1 year of follow-up
- UWFA images evaluated by 2 masked graders for ischemic index (IsI) calculation
- Data analyzed with comparative statistics



DEFINING AN ISCHEMIC CRVO BASED ON FUNCTIONAL DATA

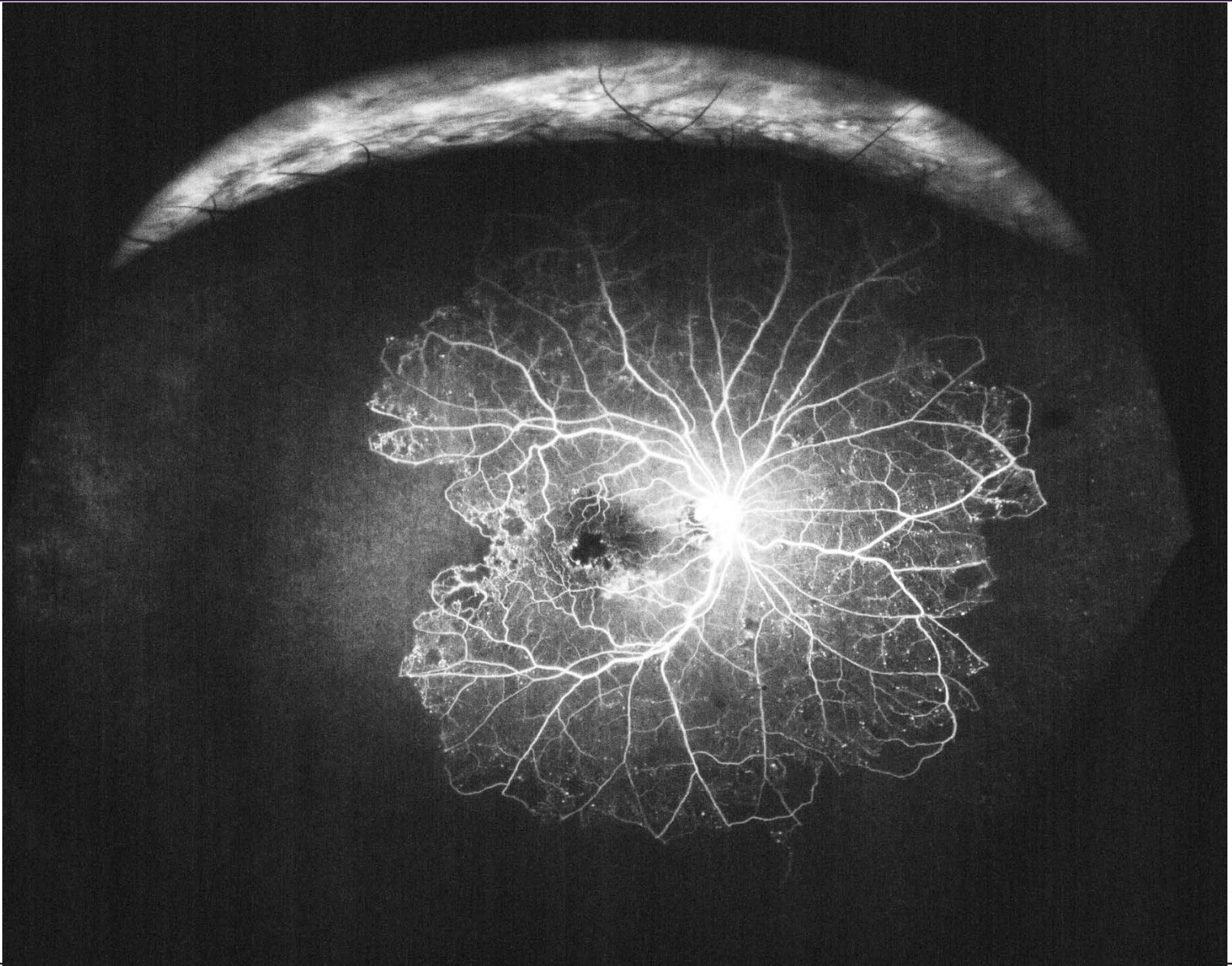
Counting fingers vision or worse + APD

(or)

Anterior or posterior segment neovascularization

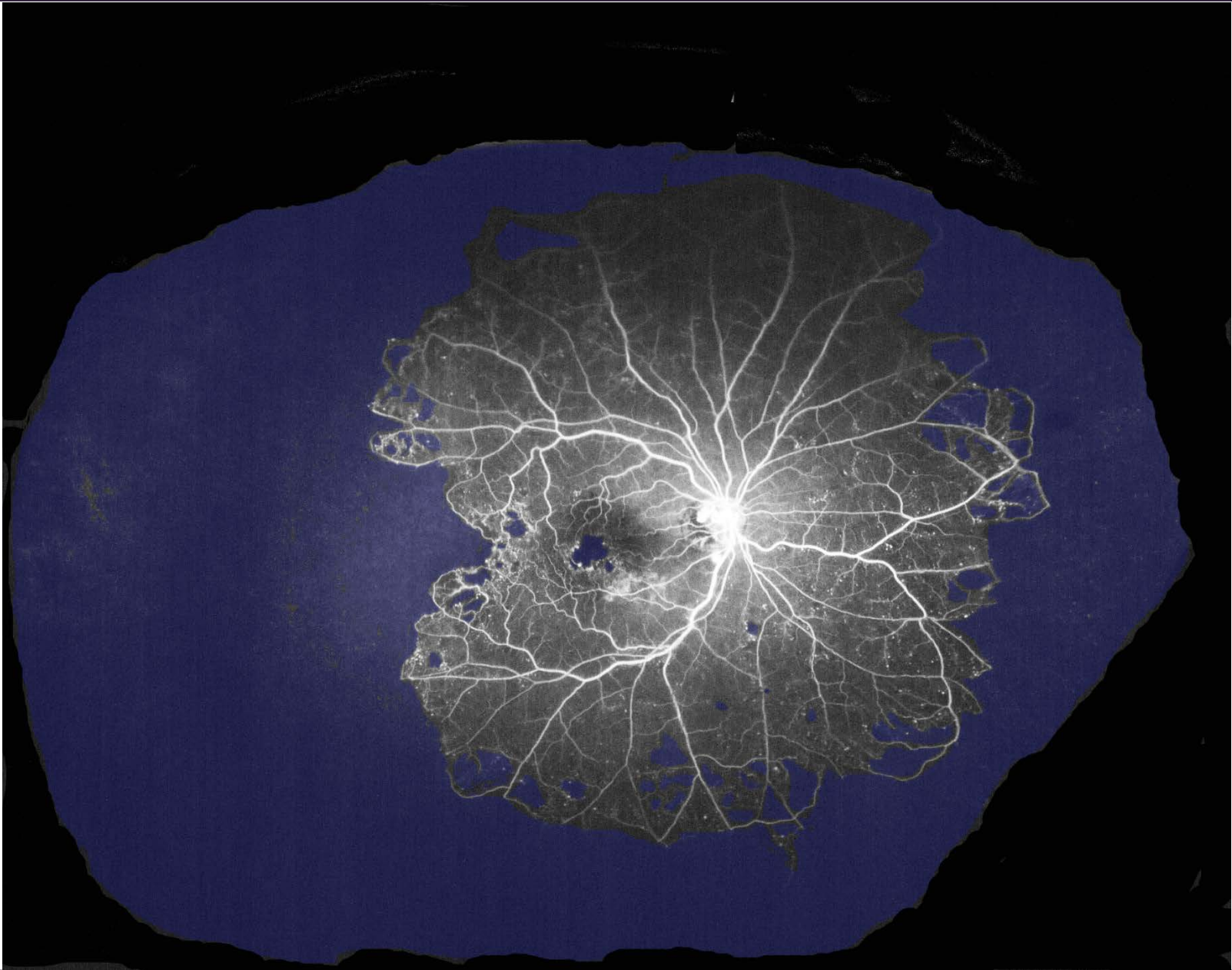


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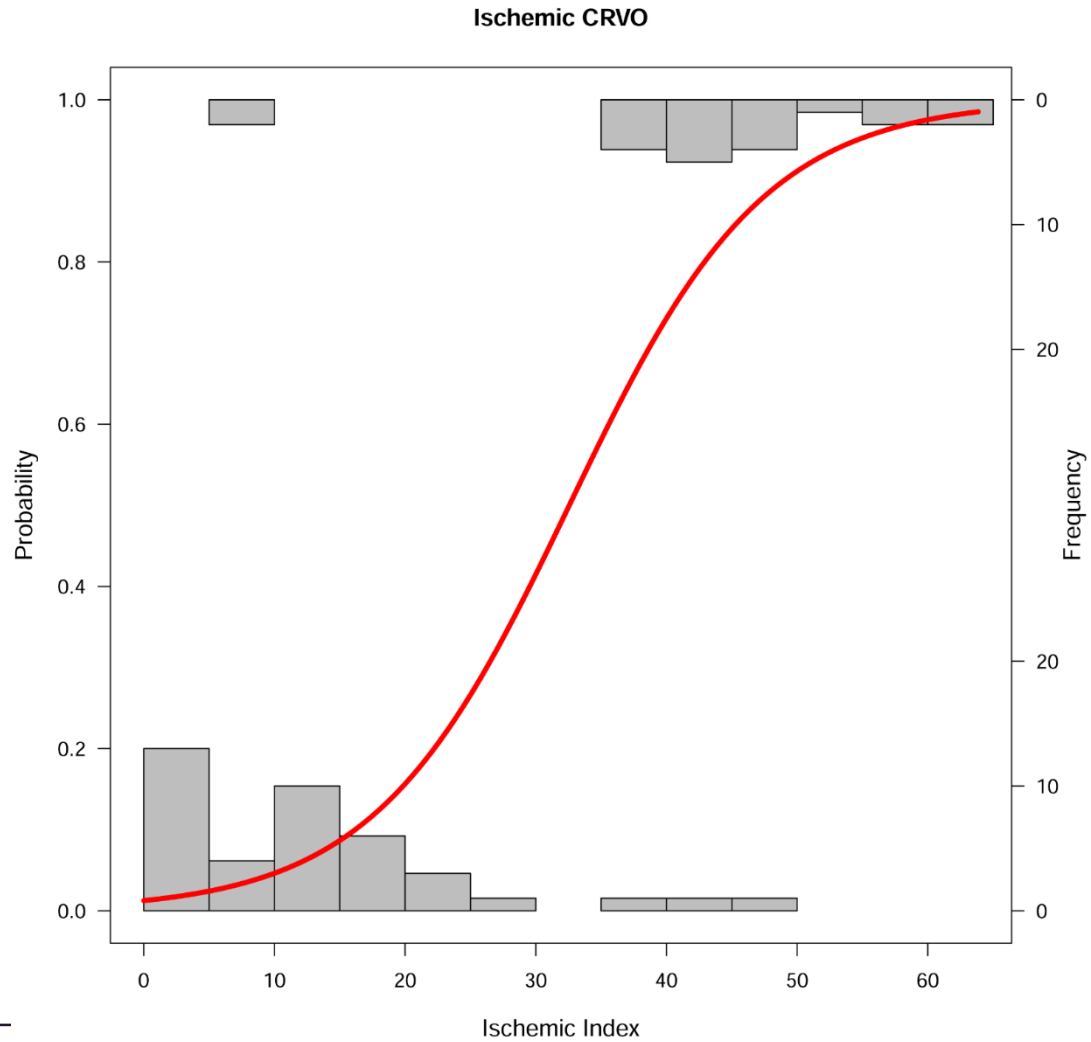


RESULTS

- 60 eyes of 60 patients included
- 15/60 (25%) were ischemic at baseline
- An additional 6/45 (13.3%) converted to an ischemic CRVO during the first year



RESULTS



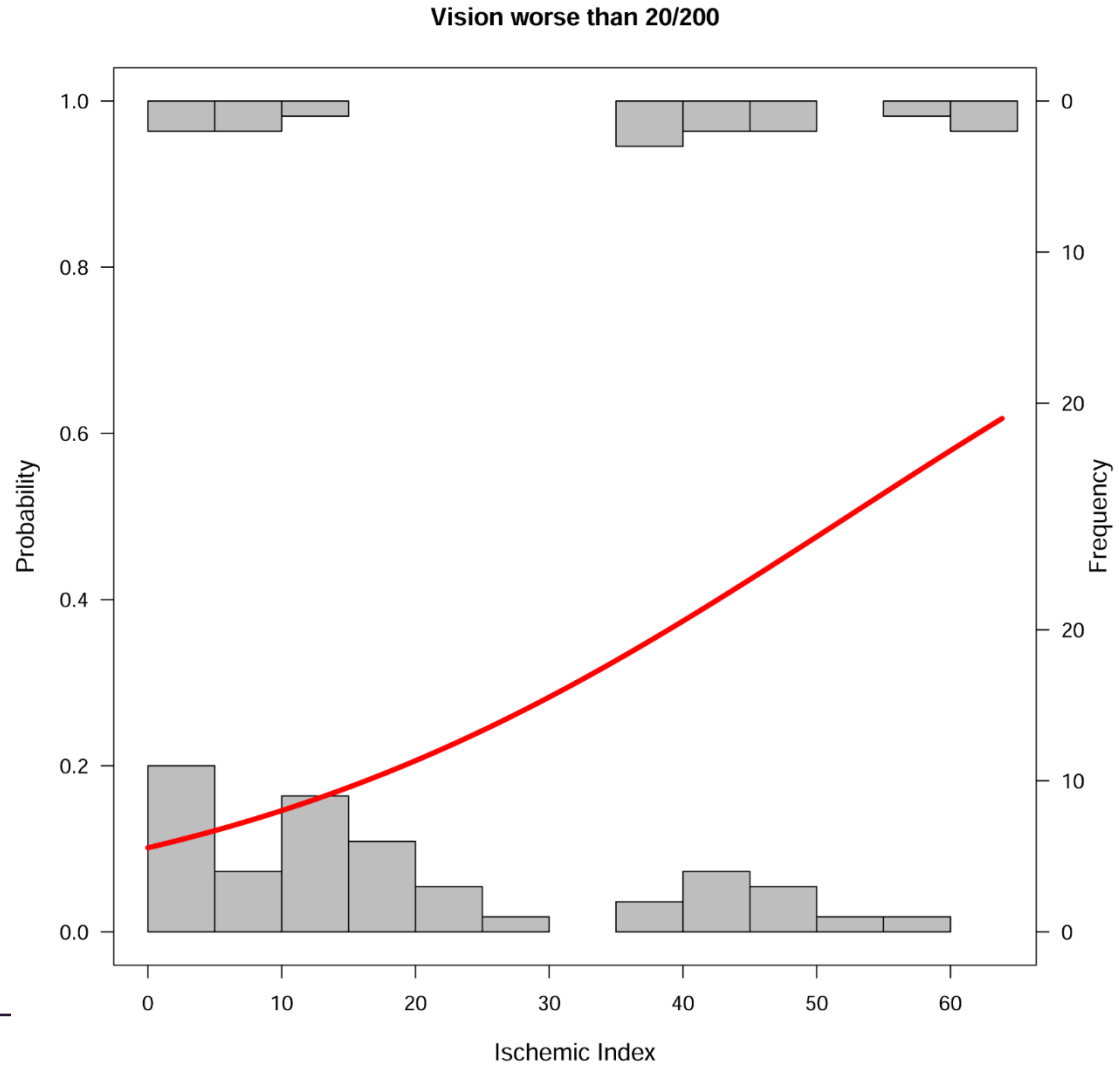


RESULTS

	IsI \geq35% N=21/60	IsI $<$35% N=39/60	
<i>Mean baseline CST \pmSD(microns)</i>	584.8 \pm 340.2	439.5 \pm 244.9	p=0.1
<i>Mean final CST\pmSD (microns)</i>	374.2 \pm 222.8	239.1 \pm 101.9	p=0.23
<i>Baseline mean logMAR acuity</i>	1.18	0.46	p<0.001
<i>Percentage with an enlarged FAZ</i>	64.7	17.5	p=0.0005
<i>Final mean logMAR acuity</i>	1.26	0.45	p<0.001
<i>Percentage with final vision 20/200 or worse</i>	N=10/21 47.6%	N=5/39 12.8%	p=0.004; OR 6.2
<i>Percentage with ischemic CRVO</i>	N=18/21 83.3%	N=2/39 13.9%	p<0.0001; OR 111



RESULTS





RESULTS - Conversion to ischemic CRVO

- Six eyes which converted to ischemic CRVO during first year, all had $Isl >35\%$
- Conversion occurred in all patients when treatment was at >6 week intervals



RESULTS - Use of IsI threshold of 35% to classify a CRVO as ischemic

- Sensitivity: 90%
- Specificity: 92.5%
- Positive predictive value: 86%
- Negative predictive value: 95%



DISCUSSION

- In treatment naïve CRVO, a baseline ischemic index of $\geq 35\%$ on UWFFA was strongly associated with classification as an ischemic CRVO during the first year of follow-up.
- A baseline ischemic index of $\geq 35\%$ associated with poorer presenting and final acuity despite similar baseline and final CMT on OCT.
- Poorer visual acuity in those with an ischemic index $\geq 35\%$ was likely related to concomitant macular ischemia.
- CRVO patients with an ischemic index $\geq 35\%$ may retain good vision and those with minimal baseline ischemia may convert to an ischemic CRVO.
- Potential role of treatment extension in conversion to ischemic CRVO.



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Thanks!



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