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Service (sector) Glaucoma N° CEP

### **Retinal Arterial Diameter Changes in Progressive and Non-progressive Glaucoma.**

Adael Soares, MD, Paul Artes, PhD, Marcelo Nicolela, MD, Raymond LeBlanc, MD, Balwantray Chauhan, PhD. Purpose: To determine if the degree of retinal arterial diameter change is different between patients with progressive and non-progressive open-angle glaucoma, in a prospective cohort study. Methods: Forty-four eyes of forty-four open-angle glaucoma patients (mean age 67.5 yrs, range 52-58 yrs; mean follow-up 4.9 yrs, range 1.3 – 7.5 yrs) were included. We determined the change in arterial diameter between the baseline and the most recent follow-up optic disc photograph. The diameter of the four major arteries was measured at the optic disc margin, and at the thinnest and broadest locations within 1 optic disc diameter from the disc margin. Patients were stratified into progressing and non-progressing groups, according to visual field and optic disc criteria. Results: Visual field progression was observed in 13 (30%) patients and optic disc progression in 24 (55%) patients. On average, the arterial diameters at the edge of the optic disc decreased significantly by 2.37% (C.I. -3.31% to -1.41%) per year of follow-up ( $P < 0.001$ ). We did not observe a significant difference in arterial narrowing between progressive and non-progressive groups, whether progression was defined by visual field or optic disc criteria ( $P > 0.112$ ). With this sample, the power to detect a 10% difference in arterial narrowing between the two groups was 66%. There was no relationship between the rates of visual field progression and arterial diameter change in the whole group ( $P = 0.171$ ) or in groups segregated into progressing and non-progressing patients ( $P > 0.104$ ). Conclusion Arterial diameters decreased in both progressive and non-progressive glaucoma. In this study, there was little evidence that arterial narrowing was more pronounced in progressive disease.