Research identifies risk factors associated with progression of glaucoma

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Elevated pressure inside the eye, cornea thinning, and visual field loss are all markers that glaucoma may progress, according to a report in the May issue of *Archives of Ophthalmology*.

Glaucoma is one of the world's leading causes of permanent vision loss. It is a group of diseases that can lead to damage of the optic nerve and can result in vision loss and blindness. Previous studies of glaucoma risk factors do not always represent the majority of patients or real-world practices in treating them. "The purpose of our study is to verify whether the main risk factors identified in populations enrolled in the major RCTs [randomized clinical trials] can also be applied to populations seen in scenarios that more closely resemble a typical clinical practice," explain the authors.

Carlos Gustavo V. De Moraes, M.D., from the New York Eye and Ear Infirmary, and colleagues collected data from patients who were enrolled in the New York Glaucoma Progression Study and who had at least eight visits for visual field loss. The study included disc photographs; visual field analysis; and measurement of peak intraocular pressure (IOP), the highest level of pressure in the fluid within the eye. A total of 587 eyes of 587 patients were evaluated.

Researchers found that glaucoma was more likely to progress when peak IOP was 18 mm Hg (millimeters of mercury) or higher. Other risk factors included thinning of the cornea, presence of disc hemorrhage in the retina of the eye, and atrophy in part of the eye.

According to the authors, perhaps the most significant findings involved the effect of IOP: "We demonstrated that for each increase in millimeters of mercury in IOP, there is a significant increase in the risk of progression for treated glaucoma patients." Since this is a simple measurement to take in the clinical setting, the findings "may help clinicians decide how aggressively to treat specific patients to slow the rate of glaucoma progression," the authors write. They also pointed to disc hemorrhage as "an indirect sign" of visual field loss that may already have occurred, and erosion of the visual field as well as cornea thinning as predictors of glaucoma progression.

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