Abstract

Title:

Progression in glaucoma

Background:

Glaucoma is considered to be a progressive, potentially blinding disease with varying rate of progression in different individuals.\textsuperscript{1,2} Treatment is focused on reducing the intraocular pressure to a level where progression is impeded. Thus, measuring progression is central in monitoring these patients.

Progression can be detected through visual field examinations or measuring structural changes through assessment of the optic disc and retinal nerve fiber layer during ophthalmoscopy, photography or through computerized methods such as optical coherence tomography (OCT). Many advocate that a diagnosis of glaucoma cannot be certain until progression is documented\textsuperscript{3,4,5,6}

There is disagreement on which methods that should be used to monitor patients. Guidelines recommend examinations of both the visual field and optic disc throughout the follow-up\textsuperscript{7} but is seldom achieved in reality.

Methods:

We have access to a large cohort of glaucoma patients included in the randomized Early Manifest Glaucoma Trial (EMGT) with up to 20 years of prospective regular follow up of both visual fields and optic disc photographs.\textsuperscript{8} For the first two projects we analyzed which of the two modalities that detected progression first.\textsuperscript{9,10}

For project number three, we evaluated how often a correct diagnosis was established in newly diagnosed individuals using the EMGT-criteria.

In the fourth project, we will explore how many of treated and untreated EMGT-patients that show progression during long-term follow-up.

In my final project, we will re-examine a cohort of healthy individuals and a cohort of glaucoma patients to compare the level of retinal nerve fiber layer thinning measured with OCT after 10 years of follow-up. We will investigate if the specificity of OCT measurements of progression can improve if adjustments are made for age-related thinning.

Preliminary results:

The first two publications concluded that for eyes without glaucomatous damage, monitoring both structural and functional change is valuable. For glaucoma eyes, monitoring the visual field should be prioritized.\textsuperscript{9,10}
Data analysis from the third project show that a correct diagnosis without any knowledge of progression is possible for newly diagnosed patients.

**Significance:**

Results will aid in streamlining glaucoma care and help prevent visual impairment through individualized follow-up.

**References:**

Publications:

