Glaucoma Laser Trial (GLT)

THE LENS

Objective

To determine the safety and efficacy of argon laser trabeculoplasty (ALT) vs topical timolol drops as first-line treatment of primary open-angle glaucoma (POAG)

Methods

Design: Multicenter randomized control trial

Sample Size: N = 271 patients (542 eyes, each eye randomized into each group)

Treatment Groups:

- 271 to laser first "LF" (ALT)
- 271 to medication first, "MF" (timolol maleate 0.5%)

Outcome Measures: IOP (primary), visual acuity, optic disc changes

Results

Point 1: Compared to MF eyes, LF eyes resulted in lower IOP and less reliance on ocular antihypertensive medications at 2-year follow-up.

- Mean IOP ~2 mmHg higher for MF eyes
- 44% of LF eyes controlled by ALT alone compared to 30% of MF eyes on timolol alone

Point 2: Visual acuity and visual fields were stable at 2-year follow-up in both groups.

Point 3: A 3.5-year follow-up study found slightly less deterioration in visual fields of LF eyes than in MF eyes.

TLDR: Challenging the traditional paradigm of maximizing medical therapy before utilizing laser treatment, ALT was found to be effective and safe in patients with POAG and comparable to medical therapy overall.

The Glaucoma Laser Trial (GLT). 2. Results of argon laser trabeculoplasty versus topical medicines. The Glaucoma Laser Trial Research Group. *Ophthalmology*. 1990;97(11):1403-1413.

The Glaucoma Laser Trial (GLT) and glaucoma laser trial follow-up study: 7. Results. Glaucoma Laser Trial Research Group. *Am J Ophthalmol.* 1995;120(6):718-731. doi:10.1016/s0002-9394(14)72725-4