Laser in Glaucoma and Ocular Hypertension (LiGHT) Trial 3- and 6-year study results summary



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PURPOSE OF THE STUDY

The laser in glaucoma and ocular hypertension (LiGHT) trial aimed to establish whether initial treatment with selective laser trabeculoplasty (SLT) is superior to initial treatment with topical medication for primary open angle glaucoma (POAG) or ocular hypertension (OHT).

DESIGN

LiGHT was a prospective unmasked, multicenter, pragmatic, randomized controlled trial (RCT).

METHOD

Patients were randomly allocated to initial SLT or eye drops. After the initial 3 years of the trial, patients in the SLT arm were permitted a third SLT if necessary; patients in the drops arm were allowed SLT as a treatment switch or escalation.

In both the 3-year and extension studies the primary outcome was health-related quality of life (HRQoL); secondary outcomes included IOP control, disease control, medication-free IOP control, and need for surgery.

CONCLUSIONS

SLT has been shown to control IOP safely and effectively in patients with ocular hypertension and mild to moderate open-angle glaucoma.

The 3-year results of the LiGHT study showed that most eyes treated with SLT as the primary intervention were drop- and surgery-free with most controlled eyes needing only one treatment.

The 6-year extension study built upon the promising 3-year results, again showing that the majority in the SLT-first group were controlled to their target IOP without medications.

LINK TO THE STUDY

KEY FIGURES

718 patients

6 years

Follow-up time

RESULTS

69,8%

69.8% of SLT patients reached target IOP and were drop-free at 72 months

5x

5 times less medication-drop related adverse events with SLT

SLT more cost effective than eye drops with 97% probability

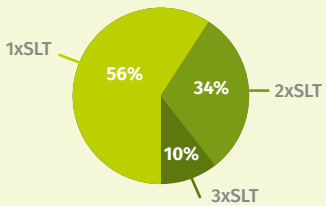
Laser in Glaucoma and Ocular Hypertension (LiGHT) Trial

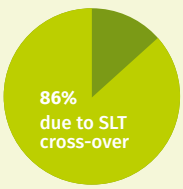
718 TREATMENT-NAÏVE PATIENTS WITH OH AND AOG

TARGET IOP ACCORDING TO GLAUCOMA SEVERITY & STARTING IOP

		356 ALLOCATED TO SLT FIRST	362 ALLOCATED TO DROPS FIRST
3 years	91 % of the total population		
	IOP on target [1]	93%	91.3%
	Reduction of IOP in treatment-naïve patients [2]	28%	28% Prostaglandins
	Surgery required [1]	0 patient	11 patients

		263 ALLOCATED TO SLT FIRST	261 ALLOCATED TO DROPS FIRST
6 years	83 % of the total population		
	Eyes Free from Drops with no surgery [5]	69.8%	18%
	Glaucoma Symptom Scale scores [5]	83.6 +-18.1	81.3 +-17.3
	Disease progression [5]	19.6%	26.8%
	Surgery required [5] (patient number)	Trabeculectomy 13 / Cataract 57	Trabeculectomy 32 / Cataract 95





SLT can be repeated when the effect wears off [1]

x 2

The second treatment is often more successful than the first [3]

Visual field in SLT patients showed less damage than eye drop users [4-6]

Adjunctive SLT can take the place of additional medication [7]

CONCLUSION: SLT is a safe treatment for OAG and OHT, providing better long-term disease control than initial drop therapy, with reduced need for incisional glaucoma and cataract surgery over 6 years.

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3- A Garg et al., "Efficacy of repeat selective laser trabeculoplasty in medication-naïve open-angle glaucoma and ocular hypertension during the LiGHT trial", Ophthalmology, 127, 467 (2020). PMID: 32005561.
4- G Gazzard et al., "Selective Laser trabeculoplasty versus drops for newly diagnosed ocular hypertension and glaucoma: the LiGHT RCT", Health Technol Assess, 23, 1 (2019). PMID: 31264958.
5- Gazzard G, Konstantakopoulou E, Garway-Heath D, et al. LiGHT trial: 6-year results of primary selective laser trabeculoplasty versus eye drops for the treatment of glaucoma and ocular hypertension. Ophthalmology. 2022;16:S0161-6420(22)00732-1.
6- D.M. Wright, E. Konstantakopoulou, G. Montesano, et al. Visual Field outcomes from the multicenter, randomized controlled Laser in Glaucoma and Ocular Hypertension Trial (LiGHT) Ophthalmology, 127 (10) (2020), pp. 1313-1321
7- Konstantakopoulou E, Gazzard G, Garway-Heath D, et al. Selective Laser Trabeculoplasty After Medical Treatment for Glaucoma or Ocular Hypertension. JAMA Ophthalmol. Published online February 20, 2025. doi:10.1001/jamaophthalmol.2024.6492

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