

Selective Laser Trabeculoplasty in Treatment of Open-Angle Glaucoma

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SUMMARY

Selective laser trabeculoplasty (SLT) is a relatively new laser treatment for lowering intraocular pressure (IOP) in glaucoma patients. In contrast to argon laser trabeculoplasty, which causes coagulative necrosis of the trabecular meshwork, SLT selectively targets pigmented trabecular meshwork cells without thermal damage. This selectivity is based on photothermolysis.¹ Prospective studies have shown that SLT is safe and its IOP lowering efficacy is similar to argon laser trabeculoplasty.² Because thermal damage is absent, SLT can be safely repeated and it was shown to be effective after short-term follow up.³

The aim of this study was to evaluate the efficacy and safety of SLT as an adjunctive treatment in medically treated open-angle glaucoma patients.

Medically treated patients with open-angle glaucoma underwent 180-degree or 360-degree SLT. The SLT was performed using a Q-switched frequency-doubled Nd:YAG laser (OptoSLT, Optotek d.o.o., Slovenia) emitting at 532 nm with a pulse duration of 4 ns and a spot size of 400 µm. The pigmented trabecular meshwork was targeted and non-overlapping laser spots were placed over 180- or 360-degrees of the trabecular meshwork. The laser energy was titrated until a fine bubble formation was seen and continued at this energy. To prevent IOP increase after SLT, before and after laser treatment 125 mg of acetazolamide per os was given. Patients were prescribed topical dexamethasone eyedrops 3 times daily for one week and were scheduled for control visits 1 week, 1, 3 and 6 months after SLT, and then every 6 months.

Twenty-two patients were included, 19 patients (30 eyes) underwent 180-degree SLT and 3 patients (4 eyes) underwent 360-degree SLT. The average follow-up after SLT was 9 months (range 1-14 months). The mean age was 69.4 years (SD 5.2). The average pretreatment IOP was 24.7 mmHg (SD 4.1) and the mean IOP reduction after SLT was 4.5 mmHg (SD 3.8). The percent of eyes with IOP reduction of 30% or more was 61%. No adverse events, such as transient anterior chamber reaction or IOP increase were observed.

SLT in our study was a safe and effective method and reduced IOP for at least 30% or more in two thirds of patients on topical antiglaucomatous medications.

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