Efficacy of selective laser trabeculoplasty (=“SLT“) in patients with insufficient IOP control under maximum tolerated topical therapy

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SLT study at the USZ, Zurich

- open, non-controlled, prospective single center study
- scheduled number of cases: 30

**Inclusion criteria:**
- Primary open angle glaucoma (including normal tension glaucoma)
- Pseudoexfoliation glaucoma (PEX)
- Pigment dispersion glaucoma
- Former ALT allowed

**Exclusion criteria:**
- Previous filtration surgery
- Closed or narrow angle glaucoma
- Juvenile and paediatric glaucoma
- Any malformation that blocks the angle
- Unclear view of the trabecular meshwork

Postoperative controls: after 2 hours, 1 day, 30, 90, 180 and 360 days
**Technology**

*Tango, Ellex Medical Pty.Ltd. Adelaide, Australia*

- Q switched, frequency doubled Nd:YAG laser*
- Spot size: 400 microns
- Pulse duration: 3 nsec
- 360° treatment of the TM (= 100 spots)
- Energy: 0.3 - 1.6 mJ according to pigmentation of the trabecular meshwork (average 0.88+/−0.22 mJ)
Efficacy of SLT: patient baseline data

- **26 patients** (of 30) actually included
  (18 f, 8 m, 12 OS, 14 OD)

- types of glaucoma:
  - 18 POAG
  - 3 NTG
  - 5 PEX

- postoperative control:
  - 30 days: n=22
  - 90 days: n=14

- preoperative **medical therapy** preliminary
  continued postoperative until day 90

- postoperative no application of anti-inflammatory eye drops
Efficacy of SLT: Results

• Mean IOP preop.: 19.8 +/- 4.6 (14.0 – 33.0)
• Mean IOP day 30: 15.5 +/- 4.1 (22% Reduction)
• Mean IOP day 90: 15.5 +/- 4.3 (22% Reduction)

• VA preop 0.6, 30 days 0.7, 90 days 0.8

• No severe complications (11 cases with mild anterior chamber inflammation which resolved spontaneously)

• In 3 patients a paradox IOP rise occurred, despite preoperative administration of an alpha-2-agonist (Alphagan®). They were treated additionally with Diamox.
Efficacy of SLT

Baseline: n=26
h_2: n=26
day_1: n=26
day_30: n=22
day_90: n=14
Efficacy of SLT: Patient data development of IOP
Selective laser trabeculoplasty is a new, improved and effective option for the treatment of glaucoma. It also enables us to further reduce IOP by 20 - 25% in patients on maximal medical therapy without severe side effects or complications. SLT is a non-thermal laser treatment so further laser treatments and filtrating surgeries are probably possible. SLT is a good option in patients with compliance problems.
Outlook

• Future SLT indications at the USZ:
  - patients, who need **only a slight additional IOP-reduction** to reach the target IOP and/or
  - patients **unable to tolerate medication therapy**

• Future dreams:
  SLT can be repeated every 1-2 years, as an **alternative** to daily application of eyedrops