

## PILOT STUDY TO EVALUATE EFFICACY AND SAFETY OF PNEUMATIC TRABECULOPLASTY IN GLAUCOMA AND OCULAR HYPERTENSIVE

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### **Abstract:**

**Purpose:** The pneumatic trabeculoplasty (PNT) is a new non-invasive and repeatable technique, which is thought to effectively reduce the intraocular pressure (IOP) without any significant collateral effects. The aim of this study was to evaluate the PNT effectiveness and safety in patients with primary open angle glaucoma (POAG) or ocular hypertension (OHT), for whom the pharmacological therapy did not allow to achieve the target pressure. The evaluation parameters were the following: IOP, visual field, peripapillary nerve fibre layer (OCT), before and after the treatment, and cardiac monitoring by ECG during the treatment.

**Materials and methods:** The study group consisted of 10, including both males (6) and females (4), mean age 56 years, who suffered from both POAG and OHT and were no longer compensated by medical therapy. The exclusion criteria were the following: advanced age, diabetic retinopathy, myopia, or other inflammatory or degenerative ocular pathologies. The PNT was performed at day 0 and 7. The pre-operating treatment included the use of non steroid anti-inflammatory drugs on the two days preceding the PNT treatment, and during the week following it, with the addition of a vasoconstrictor. All the patients kept on taking the hypotensive drugs that they already been administered. The treatment was performed in the operating theatre, and each patient was monitored by ECG. The IOP was always measured at 10 a.m. of day 0 and of post-PNT days 1, 7, 8, 14, 30, 60, 90, 120 by means of a Goldmann applanation tonometer. The visual field (24-2; threshold programme) and the nerve fibre layer measurements were performed by means of the OCT Stratus, papillary programme before and three months after the treatment. The gonioscopy and the examination of the anterior chamber were performed before and immediately after the treatment.

**Results:** The result was a mean pressure decrease by 4 mmHg $\pm$ 2,74 DS ( $p < 0.01$ ) in the treated eye. The gonioscopy, visual field and OCT (ANOVA  $p = ns$ ) were performed after the treatment did not reveal any anomalies. The ECG revealed that only the first patient had a heart rate decreased during suction, secondary to an excessive bulbar compression, while applying the suction ring.

**Conclusions:** The PNT had proved to be a simple, effective and safe technique when it is applied to correctly identified patients.