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MLT vs SLT in the Hispanic and African American Population for Treatment of Open-Angle Glaucoma

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Purpose

Few studies to date have compared MicroPulse laser trabeculoplasty (MLT), a newer laser utilized in lowering intraocular pressure (IOP), to selective laser trabeculoplasty (SLT), a traditional laser procedure used to treat open-angle glaucoma (OAG). The purpose of this study is to compare MLT to SLT and look at their respective efficacy and safety.

Methods

A retrospective chart review of OAG patients treated at a single urban academic institution in the past 2 years was performed. Baseline IOP and number of IOP lowering medications were recorded prior to trabeculoplasty and at all subsequent visits at the following intervals: <1 mo, 1-4 mo, and >5 mo. Exclusion criteria included non-standard laser parameters and visual field defects unrelated to OAG. Utilized MLT parameters were 1000 mW power, 300- μ m spot size, 300-ms duration, and >80 spots placed over 360° at 15% duty cycle. SLT parameters were .6-1.0 mJ power, 400- μ m spot size, 3-ns duration, with >50 spots over >180°. Student t-tests aided in statistical analysis of pre- and post-procedural IOP and topical IOP lowering medications.

Results

14 patients and 15 eyes (MLT 7; SLT 8) with otherwise uncomplicated eye pathology met inclusion criteria. 64% were African American and 29% Hispanic. The mean pretreatment IOP for the MLT cohort was 25.7 mm Hg and 20.1 mm Hg for the SLT cohort. In comparison to baseline pre-procedural IOP, data collected through 1 month post-procedure showed MLT lowered IOP by 10.9%, while after SLT IOP increased by 12.3%. At 4 months post-treatment, both lasers decreased IOP (MLT -7.3%; SLT -8.9%). At the end of our study period, MLT lowered IOP by 39.4%, a twofold difference from SLT's 14.8% reduction. One MLT patient required the addition of 1 glaucoma medication during the study. In the SLT arm, 2 patients required 1 additional medication, and 1 required micropulse transscleral cyclo diode treatment. No complications were noted. Small sample size, medication non-compliance, and follow-up variability potentially affected our initial data.

Conclusions

In this predominantly African American and Hispanic population, MLT demonstrated a greater decrease in mean IOP percentage from baseline. Additionally, subsequent interventions were

minimized in the MLT cohort. We are continuing to expand our sample size as well as analyze additional end points. Thus far, MLT shows efficacy and safety in lowering IOP as compared to SLT.

Layman Abstract (optional): Provide a 50-200 word description of your work that non-scientists can understand. Describe the big picture and the implications of your findings, not the study itself and the associated details.

