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**MLT (Micropulse Laser Trabeculoplasty) or Not? TED DENG¹, Sahar Noorani¹,
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Purpose/Relevance:

MLT has been shown to be a relatively safe treatment for reducing IOPs in small studies. We wished to determine the efficacy and safety of MLT as an adjunctive therapy in a large diverse patient population with medically uncontrolled mild, moderate, and severe primary open angle glaucoma (POAG) and how patient characteristics may influence outcomes.

Methods:

In an IRB-approved single surgeon, retrospective study, 102 patients who received MLT were reviewed. One eye was randomly selected per patient. Patients were excluded if they were <18 years old, had secondary glaucoma, only one functional eye, intraocular surgery three months prior to MLT, or laser trabeculoplasty one year prior to MLT.

Over 50 variables were collected including: age, sex, race, BMI, FHx of glaucoma, C/D, visual field defect (VFD), CCT, vision, complications from MLT, additional glaucoma treatments after MLT, pre and post-op IOP, etc.

Chi square goodness of fit and one-way ANOVA tests were used to determine any

differences in characteristics between patient groups. Multivariate regression analysis was performed amongst candidates who had not failed treatment at six months.

Results:

Demographics of the 102 eyes and IOP changes overtime for failure, non-failure, mild, moderate, and severe glaucoma groups are summarized in Table 1 and Figure 1. Average IOP reduction at 1 year post MLT (n=41) was 17.24% (p<.001). Thirty-six patients (35.3%) failed treatment.

Positive family history; increased BMI, age, CCT, pre-op medications; East Indian race; and worse pre-op vision were significantly correlated with lower IOP reductions (β =-4.635, -.162, -.113, -.021, -.803, -6.805, -.914 respectively, p<.001.) While, mild VFD, female gender, black race, and increased pre-op IOP were significantly correlated with greater IOP reductions (β =3.897, 2.647, 1.648, .406 respectively, p<.001.)

Discussion:

Our analysis indicates MLT is a safe, effective adjunctive treatment for POAG. Patients who are younger, have low BMI, black race, female gender, no family history, having thin CCT, better vision, or less advanced glaucoma appear to have greater IOP reduction from MLT. Patients with less advanced glaucoma may have more intact outflow facilities allowing for better response to MLT.

Conclusion:

Our study has shown MLT at one year is a safe procedure that may offer additional IOP reduction (17.24%) for patients with medically uncontrolled POAG. Predictors for better response are: younger age, lower BMI, black race, female gender, no family history, thin CCT, better vision, and less advanced glaucoma.

References:

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