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Post-operative one hour intraocular pressure spikes and long term pressure efficacy in micropulse laser trabeculoplasty (MLT) vs selective laser trabeculoplasty (SLT)

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AuthorBlock: Catherine Thomas¹, Dana Darwish², Michael Giovingo¹, Amar Mannina¹

¹Ophthalmology, Cook County Hospital, Chicago, Illinois, United States; ²University of Illinois, Chicago, Illinois, United States;

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Purpose

To determine postoperative one hour intraocular pressure spikes (IOP) in patients undergoing MLT or SLT, and to compare the two modalities.

Methods

A retrospective chart review of patients diagnosed with glaucoma or increased intraocular pressure at Cook County Health Hospital Systems was performed. Demographic information, medications, comorbidities, laser settings, and intraocular pressures were recorded. IOP spikes were defined per the American Academy of Ophthalmology as pressures >5mm from baseline.

Results

A total of 36 eyes were analyzed, 14 undergoing SLT and 22 undergoing MLT. Of the 14 patients undergoing SLT, 1 patient had a post-operative 1 hour IOP spike of 5mm (23% increase), 3 patients had no IOP changes, and 8 patients had decreased IOP. 2 patients (14%) had to increase the number of IOP lowering drops within 6 months of SLT while 12 patients (86%) remained on the same number of drops with an overall average of 2.5 drops preoperatively and 2.7 drops postoperatively.

Of the 22 patients undergoing MLT, 0 patients had a post-operative 1 hour IOP spike, 17 patients had no IOP changes, and 5 patients had decreased IOP. All 22 patients (100%) remained on the same number of IOP lowering drops within 6 months of MLT with an average of 1.5 IOP drops pre and postoperatively.

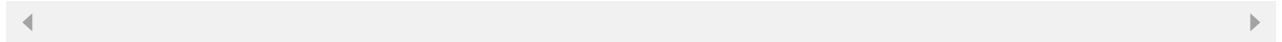
Of the 22 MLT treated patients, there were 0 pressure spikes post-operatively at 1 hour (-3.0% vs -14%; p=0.05) and 0 post-operative 1 week pressure changes (-20% vs 0%; p=0.01) showing significance when compared to the 14 SLT treated patients. There was no difference between the two modalities at 1 month (p=0.31), 3 months (p=0), 6 months (p=0.32), 9 months (p=0.17), and 12 months (p=0.51)

Conclusions

Intraocular pressure spikes 1 hour post operatively were only seen in SLT treated patients. MLT patients showed significant decreased or unchanged pressure changes when compared to its counterpart at 1 hour and 1 week. Long term pressure changes were similar amongst the 2 modalities

showing similar long term efficacy. Further study is needed to determine the association between MLT and acute pressure changes postoperatively.

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.

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