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SHORT-TERM EFFICACY AND SAFETY OF MICROPULSE TRANSSCLERAL CYCLOPHOTOCOAGULATION IN ASIAN GLAUCOMA PATIENTSMi Sun Sung¹, Jonghwa Kim¹, Sang Woo Park¹¹Chonnam National University Medical School and Hospital, Ophthalmology, Gwangju, South Korea

Purpose: To evaluate the short-term efficacy and safety of a standardized micropulse transscleral diode laser cyclophotocoagulation (micropulse TS-CPC) procedure in Korean glaucoma patients.

Methods: In this retrospective study, medical records of 19 eyes of 19 patients who were diagnosed with glaucoma, underwent micropulse TS-CPC and were followed for at least 3 months were reviewed. IRIDEX CYCLO G6™ was used for treatment at 2000 mW power for a duration of 180 s at a 31.3% duty cycle, around 270°-360°. Quadrants with previous glaucoma surgery were spared. Visual acuity (VA), intraocular pressure (IOP), endothelial cell density, and corneal astigmatism were evaluated at baseline, 1 week, 1 month and 3 months postoperatively.

Results: The mean age was 58.0 years old at the time of treatment. Among 19 eyes that were evaluated, 2 eyes had previous operation history of trabeculectomy, 2 eyes had Ahmed glaucoma valve implantation, 1 eye had selective laser trabeculoplasty, and 4 eyes had vitrectomy. Baseline mean IOP was 26.21 ± 5.22 mmHg and it significantly decreased to 17.72 ± 4.25 mmHg at postoperative 3 months ($p < 0.05$). There was no significant change in corneal astigmatism from baseline. All eyes except 1 eye had significant decrease in IOP, and among the 18 eyes, 5 eyes experienced postoperative hypotony. There was persistent corneal epithelial defect in 3 eyes including 1 eye with hypotony, and successfully treated with topical medication. Four eyes out of 19 eyes had decreased in VA of unknown cause, and 9 eyes had mydriasis due to paralysis in iris constriction which did not resolve until 3 months follow up.

Conclusions: Micropulse TS-CPC has relatively good IOP lowering effect. However some patients had complications such as hypotony, decreased VA, persistent corneal epithelial defects, and postoperative mydriasis at a standardized protocol. Lowering of energy levels in Asian patients might be needed, and individualizing protocol based on the patients and disease characteristics should be considered when performing micropulse TS-CPC.