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MICROPULSE TRANSSCLERAL LASER IN CHILDREN – THE AUCKLAND AND SINGAPORE EXPERIENCE

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Purpose: This study evaluates the efficacy and safety of micropulse transscleral diode laser cyclophotocoagulation (TSCPC), in the treatment of paediatric glaucoma.

Methods: Retrospective descriptive case series in 2 centers of patients with paediatric glaucoma treated with micropulse TSCPC or in combination with goniotomy/glaucoma drainage device implantation. Outcome measures included intraocular pressure (IOP) reduction, reduction in number of medications and post-operative complications.

Results: Eighteen eyes in 12 patients were recorded, age range was 5 months to 15 years. 8 eyes had primary infantile glaucoma, 7 had aphakic glaucoma and 3 had secondary glaucoma. Mean follow up was 2.5 years. Mean pre operative IOP was 25.5 (SD 8.6) on an average of 3.3 (SD 0.6) medications. After 1 session of treatment, mean IOP at post op month 1, 3 and 12 were 18.6 (SD 7.6), 18.4 (SD 4.6) and 20.2 (SD 4.8) respectively. Medications at post op month 1, 3 and 12 was 2.6 (SD 0.5), 2.6 (SD 0.8) and 1.6 (SD 1.3) respectively. 7 of 18 eyes had retreatments, of which 2 were successful. 6 eyes required further surgeries (4 tube implants, 2 repeat goniotomies). 4 out of 8 eyes with primary glaucoma and 2 out of 3 eyes with secondary glaucoma were treated successfully (requiring no retreatments or further drainage surgery). However, only 2 out of 7 eyes with aphakic glaucoma were successfully treated. None of the treated eyes had hypotony, phthisis, or retinal detachment.

Conclusions: Micropulse TSCPC is a non-invasive, safe and repeatable adjunctive treatment modality in paediatric glaucoma and a safer alternative to traditional transscleral cyclophotocoagulation. However it seems to be poorly effective for aphakic glaucoma in this series.