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Randomized Trial on Illuminated-Microcatheter Circumferential Trabeculotomy Versus Conventional Trabeculotomy in Congenital Glaucoma.

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Abstract

PURPOSE:

To compare 1-year outcomes of illuminated microcatheter-assisted circumferential trabeculotomy (IMCT) vs conventional partial trabeculotomy (CPT) for primary congenital glaucoma (PCG).

DESIGN:

Randomized clinical trial.

METHODS:

Forty eyes of 31 patients with unilateral or bilateral primary congenital glaucoma aged less than 2 years were randomized to undergo IMCT (20 eyes) or CPT (20 eyes). Primary outcome measure was intraocular pressure (IOP) reduction. The success criterion was defined as IOP ≤ 12 mm Hg without and with antiglaucoma medications (absolute success and qualified success, respectively).

RESULTS:

The mean age of our study population was 8.35 ± 1.2 months. The mean preoperative IOP was 24.70 ± 3.90 mm Hg in the IMCT group and 24.60 ± 3.31 mm Hg in the CPT group. Both groups were comparable with respect to preoperative IOP, corneal clarity, corneal diameter, vertical cup-to-disc ratio, and refractive error. In the IMCT group, 360-degree cannulation was achieved in 80% (16/20) of eyes. For the IMCT group and CPT groups, respectively, the absolute success rates were 80% (16/20) and 60% (12/20) ($P < .001$) and qualified success rates were 90% (18/20) and 70% (14/20) ($P < .001$). Both procedures produced a statistically significant reduction in IOP, and eyes undergoing IMCT achieved a lower IOP than CPT group eyes at 12 months follow-up (9.5 ± 2.4 mm Hg and 11.7 ± 2.1 mm Hg, respectively, $P < .001$).

CONCLUSION:

In primary congential glaucoma, illuminated microcatheter-assisted 360-degree circumferential trabeculotomy performed better than conventional partial trabeculotomy at 1 year follow-up and resulted in significantly lower IOP measurements.