



THE EFFECT OF ARGON LASER TRABECULOPLASTY ON INTRAOCULAR PRESSURE AFTER FAILURE OF INITIAL MEDICAL TREATMENT VERSUS INITIAL TRABECULECTOMY IN THE COLLABORATIVE INITIAL GLAUCOMA TREATMENT STUDY (CIGTS)

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Background: Although argon laser trabeculoplasty (ALT) is often performed to reduce intraocular pressure in patients with uncontrolled glaucoma, most studies have evaluated its effect in patients who have not undergone prior trabeculectomy. In the Collaborative Initial Glaucoma Treatment Study (CIGTS), the protocol required that ALT be performed as the next step after initial medication or initial trabeculectomy had failed, thus providing an opportunity to compare its relative efficacy in each of these settings.

Design: Post hoc analysis of randomized controlled trial (AGIS)

Participants/Intervention: In CIGTS, ALT was performed in 155 eyes – 89 in the medication arm and 55 in the surgery arm.

Main Outcome Measure: IOP

Results: Using the IOP measured at the last CIGTS study visit prior to performing the ALT as the preoperative IOP (mean time before ALT = 51 days) and the IOP measured at the first CIGTS study visit after ALT as the postoperative IOP (mean time after ALT = 128 days), mean IOP was reduced from 22.5 mmHg to 17.7 mmHg ($P < 0.0001$), a difference of 4.9 ± 4.7 mmHg. Patients initially treated with medication demonstrated an IOP reduction of 5.4 ± 4.8 mmHg versus 4.0 ± 4.4 mmHg in the initial surgery patients ($P = 0.07$). The amount of IOP reduction did not vary significantly for age or race, although the amount of IOP reduction was less in blacks than in whites (4.3 versus 5.5 mmHg respectively; $P = 0.16$). This was associated with a significantly lower IOP after ALT in whites (16.4 mmHg) than in blacks (18.7 mmHg; $P = 0.003$).

Conclusions: These findings provide some insights into the differential effect of ALT after initial medication or initial trabeculectomy has failed and indicate that IOP reduction can be achieved in both settings.