Efficacy and safety of contact transscleral diode laser cyclophotocoagulation for advanced glaucoma.

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Abstract

BACKGROUND: This prospective study was conducted to evaluate the efficacy and safety of transscleral diode laser cyclophotocoagulation in refractory, advanced glaucoma.

PATIENTS AND METHODS: One hundred eyes of 100 patients with advanced glaucoma refractory to medical treatment were consecutively treated by transscleral diode laser cyclophotocoagulation. Success was defined as a final intraocular pressure between 5 and 21 mm Hg in eyes with a visual acuity of more than hard movements, relief of pain in eyes with a visual acuity of hand movements or less including blind eyes, and reduction of carbonic anhydrase inhibitor use in all eyes.

RESULTS: Ninety-three patients were followed up for 1 year after initial treatment. The overall success rate was 74.2%. Of 60 eyes with a visual acuity of more than hand movements, intraocular pressure between 5 and 21 mm Hg was achieved in 41 (68.3%) eyes. Relief of pain was achieved in 28 (84.8%) of 33 eyes. Reduction of systemic carbonic anhydrase inhibitor use was highly significant (P < 0.0001). Within 1 year, 173 laser procedures (mean, 1.9 per patient) were performed. The probability of success increased significantly (P = 0.004) with the age of the patients, from 55% for patients younger than the age of 50 years to 83% for patients older than the age of 50 years. Previous ocular surgery decreased the success probability from 95% to 68% (P = 0.02). A high success rate was achieved in inflammatory glaucoma (75%), primary open-angle glaucoma (89.5%), and neovascular glaucoma (86.7%). The results were relatively poor in traumatic glaucoma (57.1%), aphakic glaucoma (57.1%), and congenital or juvenile glaucoma (62.5%). No significant relationship between loss of visual acuity and failure of treatment (P = 0.3) could be detected. No phthisis bulbi or persistent hypotonia developed.

CONCLUSIONS: Transscleral diode laser cyclophotocoagulation is an effective and safe method for the treatment of advanced, refractory glaucoma. However, repeated treatments are often necessary. Success of treatment depends on the age of patients, previous surgery, and the type of glaucoma.

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