Increasing hypotensive efficiency of glaucoma surgery using proteolytic therapy

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Purpose: Evaluation of proteolytic therapy effect in increasing hypotensive efficiency of glaucoma surgery.

Methods: 30 patients aged 45 to 82 (64 ± 3.0 yrs) with moderate and advanced primary open angle glaucoma, who received standard or modified trabeculectomy, showed an increase of IOP to 18 - 36 mm Hg (ave. 24.6 ± 1.1 mmHg) 2 - 6 weeks after surgery and were treated by a solution of proteolytic enzyme, collalysine. The treatment consisted in bleb needling with 0.2 ml of collalysine solution (50 collalysine units/ml) followed by a 10 to 20-day course of instillations of the same solution performed daily in a sequence of six instillations within one hour. Collalysine instillations were prescribed when excessive scarring appeared in the area of new outflow pathways or when regular treatment (needling with dexamethasone and/or hypotensive monotherapy) proved ineffective. The duration of proteolytic therapy was 10 to 20 days (averagely, 14.6 ± 1.6 days). Patients were followed up for 1 to 6 months.

Results: In all patients, IOP stabilized at 10 to 20 mmHg (ave. 15.8 ± 0.9 mm Hg, p < 0.05). In 30% of cases (10 patients), IOP compensation could only be achieved with additional instillations of hypotensive drops (not by the maximum pattern). The remaining 70% patients had their IOP stabilized after the course of proteolytic treatment without resorting to hypotensive medications. 2 patients had complications after needling: temporary shallowing of the anterior chamber. These patients were prescribed conservative therapy, whereupon the volume of the anterior chamber was restored. Resorting to collalysine at the first signs of scarring helped reduce IOP from 23.1 ± 1.3 to 15.2 ± 1.5 mmHg (averagely, by 8.1 ± 2.7, p < 0.05); when used after prior ineffective treatment, the medication reduced IOP from 23.9 ± 2.0 to 16.2 ± 1.1 mmHg (averagely 7.9 ± 2.1 mmHg, p < 0.05).

Conclusion: Using proteolytic enzyme reduced excessive scarring of outflow pathways after trabeculectomy and increased the hypotensive effect of glaucoma surgery.