

INFLUENCE OF ANTIGLAUCOMA SHUNT ON PROTEIN LEVELS IN AQUEOUS HUMOR

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Introduction: Glaucoma remains the leading cause of irreversible blindness worldwide. Worldwide, the number of people with glaucoma is expected to increase to 111.8 million by 2040 [Tham YC, Li X, Wong TY, 2014]. In glaucoma, particularly primary open-angle glaucoma (POAG), studies have shown that the levels of certain proteins in the aqueous humor are altered. These changes are thought to reflect both neurodegenerative and inflammatory processes associated with glaucoma [Williams PA, 2017]. All of these characteristics influence the functioning of the filtering antiglaucoma devices.

Aim: To compare the protein level in aqueous humor after implantation of the antiglaucoma shunt with valve versus trabeculectomy in white New Zealand rabbits.

Material and Methods: The preclinical study included 2 groups: Group A (20 rabbits) implanted with the antiglaucoma shunt with valve and Group B (20 rabbits), the control group, undergoing trabeculectomy. Both groups received the same local antibacterial treatment and the follow-up was made by the same ophthalmologist.

Results: The preoperative total protein level in both groups included in the study ranged from 2.32- 3.63 g/L, with a mean value of 3.02 ± 0.33 g/L for Group B and 3.03 ± 0.34 g/L for Group A. Postoperatively, at the 3-month interval, a decreasing trend in protein concentration is observed, with a return to the initial values in both groups, with no significant differences between the two groups. This fact points to the efficacy of the new treatment method vs in trabeculectomy.

Conclusion: Antiglaucoma shunt implantation is an effective filtering procedure for glaucoma surgery and is a good alternative to trabeculectomy.