

## BIOPTRON LIGHT THERAPY TO DRY EYE CAUSED BY LONG-TERM TOPICALLY APPLIED ANTIGLAUCOMA DRUG WITH BENZALKONIUM-CHLORIDE

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Benzalkonium-chloride is the most commonly used preservative in modern antiglaucoma topical therapy, with a broad range of advantages and cumulative side effects on the anterior eye surface. Benzalkonium-chloride is classified as a severe irritant of mucous membranes, resulting in dryness of the anterior eye surface.

The aim of the paper was a scientific confirmation of the efficacy of Bioptron light therapy, its favorable response in healing and elimination of dry eye symptoms and signs caused by topical use of antiglaucoma therapy with Benzalkonium-chloride as a preservative.

The research included 36 patients who were divided into three groups: the first and second group with different approaches in the treatment of dryness of anterior eye surface, and the third control group. A complete ophthalmic examination of the patients was done before our examination and after Bioptron light therapy. The examination was done according to „Dry eye severity grading scheme“, and as an objective parameter we did Shimer's test 1. In the second group of patients, cured by Hylol® gel solution and Bioptron light therapy, symptoms and signs decreased from 27.78% to 5.56% ( $p < 0.001$ ). The values of Shimer's test 1 showed an improvement from 30.56% to 13.89% deficit in tear secretion ( $p < 0.001$ ). The symptoms and signs of anterior ocular surface dryness are statistically significantly reduced. Tolerant of antiglaucoma drug therapy, comfort and patient compliance are significantly improved. It is necessary to include Bioptron light therapy in all patients on antiglaucoma therapy with Benzalkonium-chloride as a preservative.

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**Key words:** *Benzalkonium chloride, Keratoconjunctivitis sicca, Bioptron® light therapy*