

Original Article

## **Influence of Corneal Cross-linking for Keratoconus on Several Objective Parameters of Dry Eye**

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### **Abstract**

#### **PURPOSE:**

To evaluate the potential influence of corneal cross-linking (CXL) with ultraviolet-A light and riboflavin in keratoconic eyes on several objective parameters of dry eye syndrome.

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#### **METHODS:**

This prospective single center study included 30 consecutive eyes of 16 patients that underwent CXL with riboflavin and ultraviolet-A treatment (epithelial removal, 30 minutes soaking with riboflavin, 30 minutes of illumination with 365 nm, 3 mW/cm<sup>2</sup>, 5 cm distance). Several dry eye syndrome parameters were evaluated preoperatively and 3 and 6 months after the procedure: intra-individual comparison of fluorescein and Rose bengal staining, height of tear film meniscus, and tear film break-up time.

#### **RESULTS:**

Pathologic staining (more than 10 point-shaped areas or diffuse staining) with fluorescein was evident before CXL in 1 eye, 3 months after CXL in 1 eye, and 6 months after CXL in 1 eye. Rose bengal staining 3 and 6 months postoperatively was comparable to preoperative staining. Tear film height was reduced in 2 eyes before CXL and in 4 eyes 3 months postoperatively, and was normal in all eyes after 6 months. The number of eyes with reduced tear film break-up time was not significantly changed.

## CONCLUSIONS:

CXL had no significant impact on several parameters of dry eye syndrome 3 and 6 months postoperatively.

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## **AUTHOR CONTRIBUTIONS**

*Study concept and design (ST); data collection (SO, ST); analysis and interpretation of data (GA, AJK, SO, ST); drafting of the manuscript (SO, ST); critical revision of the manuscript (GA, AJK, ST); statistical analysis (SO); supervision (ST)*

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