

SUMMARY

The treatment modification of progressive keratoconus using the corneal collagen cross-linking with riboflavin and UVA irradiation.

Aim: The aim of the study is comparison of the treatment modification of progressive keratoconus using the corneal collagen cross-linking with riboflavin and UVA irradiation.

Methods: The retrospective study of 35 eyes of 28 patients, who underwent the corneal cross-linking in our clinic. The study group included two groups. Group A included 15 eyes with the epithelium removal in the lower part of the cornea. Group B comprises 20 eyes with the circular shape corneal epithelium removal of size 8-9 mm. The performance of corneal cross-linking in both groups was the same. One year of follow up of both after CXL.

Results: To evaluate the results of CXL the following parameters were measured and compared: corneal epithelium healing, the pain intensity after removal of the epithelium, the Vogt striae presence, presence and persistence of corneal opacification (haze), endothelial cell count, uncorrected visual acuity (UCVA), best corrected visual acuity (BCVA), objective refraction and flat axis of astigmatism.

Pentacam measurements were evaluated: flat and steep keratometry, (K1, K2), maximum simulated keratometry, (K_{max}), elevation front (EF) and elevation back (EB), corneal pachymetry in thinnest location (CCT), apex centration with x a y axis measurement and sagittal curvature front changes (SCF). Followed correlation of flat and steep keratometry K1,K2, astigmatism and the flat axis of astigmatism were measured in different corneal topographic systems before and one year after CXL.

Conclusion: The results of my retrospective study reveals, the partial and total epithelium removal is appropriate in corneal cross-linking to stop progression of keratoconus, to remodelate corneal shape and to stabilize patient`s visual acuity.

Key words: keratoconus, corneal cross-linking, epithelium removal, "epithelium-off", "epithelium-on"