Recent Management of Keratoconus by Corneal Collagen Cross Linking

Bassant Ahmed Amer

Corneal CXL mediated by riboflavin and UVA appears to be a safe and efficacious procedure in halting the progression of keratoconus and iatrogenic ectasia. CXL reduces the corneal curvature, spherical equivalent refraction and refractive cylinder in eyes with corneal instability and progressive irregular astigmatism due to keratoconus and ectasia. The CXL technique is promising in treating corneal melting conditions or infectious keratitis because cross-linking would strengthen a collagenolytic cornea while UVA irradiation eliminates the infectious agent. Combination of ICR implantation with CXL seems to have a synergistic effect for reverting the progressive irregular astigmatism due to keratoconus or iatrogenic ectasia. A sequential or simultaneous combination of limited topography-guided PRK and CXL, whose goal is normalizing the cornea as much as possible, shows promising results.To avoid danger for the endothelium, lens or retina, it is mandatory in each patient to perform pre-operative pachymetry to exclude extended areas with less than 400 mm stromal thickness, and to check the UVA irradiance exactly using a UVA-meter.In conclusion: Crosslinking treatment of keratoconus is a very promising new method of treating keratoconus. At the present stage of knowledge, the treatment should only be performed in patients with documented progression of keratoconus in the preoperative months. With more long-term experience, prophylactic treatment of keratoconus at an early stage might become possible. Additional refractive corrections can also be considered if necessary. In case a recurrence of keratoconus progressionSummary and Conclusion- 106 -should occur in the long run, which has not been observed so far, a second crosslinking procedure might be a choice. To avoid serious side effects it is mandatory in each patient to perform preoperative pachymetry to exclude extended areas with less than 400 mm stromal thickness, and to check the UVA irradiance before each treatment using a UVA-meter (Wollensak, 2006).There is good reason for the hope that the new cross-linking treatment might become the standard treatment for progressive keratoconus and a breakthrough in the treatment of keratoconus reducing significantly the need for corneal transplantation.