Intoduction

Collagen cross-linking (CXL) is widely used in polymer industry . It has been shown in laboratory studies to increase the biomechanical strength of the cornea and sclera by the photosensitzer riboflavin and ultraviolet A-light ***(Hersh et al., 2011).***

A New York University's study demonstrated that increased corneal rigidity in vivo using surface wave elastometry following riboflavin/UVA cross-linking. The study showed that Collagen Crosslinking may offer promise in the stabilization of progression of keratoconus by reducing corneal elasticity. This stability may enable Excimer refractive surgery correction, which was traditionally contra-indicated ***(Caporossi et al ., 2007).***

A new technique of collagen crosslinking has been developed by a research group at Dresden Technical University aiming at slowing down or arresting the progression of keratoconus to delay or avoid the need for keratoplasty. Unlike other treatment methods that only address the refractive effects of the disease, this new method treats and prevents the underlying pathophysiological mechanism ***(Hafezi et al. , 2009)***.

A study conducted at Sienna University showed that riboflavin-UV crosslinking is safe and effective to reduce the progression of keratoconus overall in early stages of the disease, especially in young patients without Vogt striae. The optical and visual performance

improvement seems to be particularly related to increasing corneal symmetry induced by restored corneal rigidity ***(Hersh et al., 2011).***

Collagen crosslinking might become the standard therapy for progressive keratoconus in the future diminishing significantly the need for corneal transplantation. Preoperative pachymetry and individual control of the ultraviolet A-irradiance before each treatment are mandatory *(**Agarwal ,2009).***

Collagen crosslinking may be a new way for stopping the progression of keratectasia in patients with keratoconus. The need for penetrating keratoplasty might then be significantly reduced in keratoconus. Given the simplicity and minimal costs of the treatment, it might also be well-suited for developing countries. Long-term results are necessary to evaluate the duration of the stiffening effect and to exclude long term side-effects***(Baumeister et al .,2009) .***

Ectatic changes can occur as early as 1 week after LASIK, or they can be delayed up to several years after the initial procedure. In many cases, corneal transplant is eventually performed to manage this complication. The continuously growing popularity of refractive surgery procedures, namely LASIK, has caused increased concern regarding the serious complication of keratectasia ***(Kanellopoulos and Binder, 2010).***

Intoduction

Corneal Collagen Cross-Linking to Stop Corneal Ectasia exacerbated by Radial Keratotomy (RK) , Riboflavin UV-A-induced corneal cross-linking seems to be a promising surgical option in the management of unstable corneal ectasia exacerbated by RK, particularly in eyes with pre-existing keratoconus. A large cohort and longer follow-up are needed to determine its long-term efficacy in this clinical setting ***(Hersh et al., 2011).***