CORNEAL COLLAGEN CROSSLINKING (C3R) – CO-MANAGEMENT GUIDELINES

INDICATIONS

1. Keratoconus: 14 years of age and older, minimum corneal thickness > 400 microns, no history of herpes simplex keratitis
2. Corneal ectasia following LASIK or PRK: minimum corneal thickness > 400 microns
3. Radial keratotomy: fluctuation in vision and/or progressive hyperopia, minimum corneal thickness > 400 microns
4. Early Fuchs corneal dystrophy with fluctuation in vision secondary to epithelial edema

GOALS

1. To prevent disease progression in keratoconus and corneal ectasia.
2. To reduce the need for a corneal graft in keratoconus and corneal ectasia
3. To prevent progressive hyperopia and fluctuation in vision after radial keratotomy
4. To enhance vision in early Fuchs dystrophy and delay the need for a corneal graft by enhancing the compactness of the corneal collagen fibers with a resultant decrease in epithelial edema.

PROCEDURE

1. One or both eyes treated on same day
2. Pilocarpine drops to constrict pupil
3. Tetracaine anesthetic drops instilled
4. Operating room used with patient on surgical bed
5. Central corneal epithelium (8 x 8 mm) removed with Rotary brush
6. Riboflavin drops instilled for 30 minutes
7. Ultraviolet light applied for 30 minutes
8. Antibiotic and nonsteroidal drops instilled in the operating room
9. Bandage soft contact lens inserted

POSTOPERATIVE PATIENT INSTRUCTIONS

1. Antibiotic drops (eg Vigamox) QID for 1 week
2. Nonsteroidal drops (eg Voltaren BID for 3 days)
3. Steroid drops (eg Flarex QID x 1 week, BID x 1 week

POSTOPERATIVE CARE & FINDINGS

1. Bandage soft contact lens removed when epithelium intact (usually 5 days postop)
2. Heaped-up epithelium with pseudodendrites noted during first 2 weeks
3. Mild diffuse corneal haze noted during the first 2 weeks
4. May return to contact lens wear by 2 weeks with the previous contact lenses.
5. Reticulated corneal haze usually seen at 1 month. This is an indication of biochemical changes and resultant corneal crosslinking. The fine reticulated haze does not interfere with vision and gradually diminishes.
6. Uncorrected vision and best corrected vision will typically be worse during the first 1-2 months. It takes time for complete epithelial healing. The epithelium undergoes thickening (hyperplasia) and thinning (hypoplasia) to smooth the corneal surface and improve the quality of vision.
7. Vision typically improves by 2-4 months to preoperative levels or better.
8. Corneal flattening in keratoconus and ectasia averages 2 diopters by 4-6 months
9. Corneal stability in radial keratotomy seen by 4-6 months
10. If patient is contact lens intolerant to consider Intracornal ring procedure to reduce irregular astigmatism and induce further corneal flattening.
11. If patient desires an improvement in uncorrected vision and has reduced best-corrected spectacle acuity then an Intracorneal ring procedure is required. To correct sphere or astigmatism options include PRK (low refractive error) or a phakic implant (moderate to high refractive error).