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### Combined accelerated corneal collagen crosslinking and photorefractive keratectomy for keratoconus and ectasia using pulsed or continuous UV-A light

**Abstract:**

Keratoconus (KC) is a progressive corneal thinning disorder traditionally managed with rigid gas permeable contact lenses or Corneal Cross-Linking (CXL). CXL stabilizes the keratoconic cornea but does not improve vision. Recent studies suggest that combining CXL with Topography-Guided Photorefractive Keratectomy (TG-PRK) can enhance visual outcomes. This study evaluates the efficacy of two CXL protocols pulsed and continuous UVA light when combined with TG-PRK. In this single-site, prospective, unmasked clinical trial, patients were randomized into two groups receiving either pulsed or continuous UVA light during CXL. Outcomes measured included uncorrected and corrected distance visual acuity (UDVA, CDVA), manifest refraction spherical equivalent (MRSE), mean keratometry (Kmean), maximum keratometry (Kmax), and maximum flattening (Kmaxflat). Twelve eyes were followed for 12 months. CDVA improved from 0.19 ± 0.12 logMAR to 0.12 ± 0.12 ($p < 0.05$). Kmean

improved from 47.51 ± 4.10 D to 45.94 ± 3.62 D, and Kmax from 57.43 ± 6.20 D to 52.18 ± 5.33 D ($p < 0.05$). The mean Kmaxflat at 12 months was -7.98 ± 2.46 D. No significant differences were observed between UVA treatment groups. Simultaneous CXL and TG-PRK effectively improve vision and stabilize KC progression. Both pulsed and continuous UVA protocols are equally effective.

### Biography

**Kriti Saxena** has completed her B.S. in Neural Science at the age of 21 years from New York University, graduating Summa Cum Laude. She is currently a medical student at Hackensack Meridian School of Medicine with an avid interest in Ophthalmology.