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Summary of clinical outcomes of corneal crosslinking using CCL-vario device**Sheng-Chieh Huang**

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We will present summary of clinical outcomes of corneal crosslinking using CCL-vario device. CXL is widely accepted as an effective strategy for stopping progression of keratoconus and ectasia after refractive surgery. CXL using Dresden protocol with 30 minutes Riboflavin instillation and 3 mW/cm² irradiation has been proved safe and effective. In recent years, accelerated CXL was developed with higher irradiation intensity (9-30 mW/cm²) can theoretically shorten surgery time (4-10 minutes) and reduce discomfort of patients. However, it still needs more clinical evidences to evaluate the safety and effectiveness of accelerated CXL. Here we used MEDLINE to identify all CXL studies on keratoconic or ectatic eyes [n>6, follow-up >3 months, using CCL-365 various system (3-18 mW/cm²)] and compared the clinical data of traditional and accelerated CXL. In 3 mW group: 3 studies and 120 eyes were included, for visual acuity (logMAR UDVA, CDVA) and Kmax, at latest follow-up 100% studies reported improvement. In 9 mW group: 4 studies and 99 eyes were included, for visual acuity and Kmax, at latest follow-up, 50% vs. 100% studies reported improvement. In 18 mW group: 10 studies and 456 eyes were included, for visual acuity and Kmax, at latest follow-up, 40% vs. 70% studies reported improvement. On the other hand, stromal edema, haze were reported in all 3 groups within first 3 months and disappeared at latest follow-up. There is no severe complication including keratitis, prolonged haze or scarring was reported. These clinical results showed accelerated CXL also can stop corneal ectasia without significant complication although corneal stiffening effect was not compared in 3 groups. In conclusion, accelerated CXL (9-18 mW/cm²) may achieve similar efficacy of traditional CXL without significant safety problems.

Biography

Sheng-Chieh Huang has completed his MS in Microbiology and Immunology from National Yang-Ming University (2003-2005) and his PhD from the Institute of Life Sciences, National Defense Medical Center in Taiwan (2007-2014). He has then completed Postdoctoral Fellowships (2014-2015) from the Institute of Molecular Biology, Academia Sinica in Taiwan (2014-2015). He is currently a Manager at Photon Medical Technology (Xiamen) Co. His expertise includes molecular biology and immunology research.

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