

Collaborative Longitudinal Evaluation of Keratoconus (CLEK) – 1995-2007



Objective

To evaluate changes in vision, corneal status, corneal curvature, and vision-related quality of life (V-QoL) changes over time in patients with Keratoconus

Methods

Design: Prospective Natural History Study

Sample Size: 1209 patients with keratoconus

Outcome Measures:

- Distance visual acuity was measured with high- and low-contrast Bailey–Lovie chart using ETDRS letters
- Manual keratometry & Slit lamp exam
- 11 scales of the NEI-VFQ

Results

Point 1: Baseline characteristics of patients were characterized

- 53% of enrolled patients reported a history of atopy, 50% reported a history of vigorous eye rubbing
- Only 14% had a family history of keratoconus

Point 2: Visual acuity worsened over the study period: 2.03 letter (high-contrast) and 4.06 letter (low-contrast) reduction in BCVA at 7 years

- Better baseline acuity, steeper corneas, and corneal scarring associated with larger reduction

Point 3: Corneal curvature increased over the study period

- Over an 8-year period, the average estimated increase in corneal steepness was 1.44-1.60D (based on the type of keratometry reading)
- Of the 878 patients without corneal scarring at baseline, the 5-year incidence of scarring was 14%

Point 4: Quality of life measures decreased over the study period for most of the V-QoL categories

- Significant decline of -3.85 points over 7 years was noted for "Dependency"
- Exceptions included increases in V-QoL of +1.61 points (Ocular Pain) and +3.36 points (Mental Health)
- Certain clinical indicators were most associated with decline: 10-letter decline in VA, $\geq 3D$ change in corneal curvature, and incident of scar

TLDR: Keratoconus is a debilitating disease, causing a reduction in vision and progressively worsening quality of life