Cost-effectiveness of corneal crosslinking for progressive keratoconus

Daniel A. Godefrooij, MD
Marie-Josee J. Mangen, PhD
Elsie Chan, MD PhD
David P. O’Brart, MD PhD
Saskia M. Imhof, MD PhD
G. Ardine de Wit, PhD
Robert P.L. Wisse, MD PhD

Financial disclosure: Unrestricted grant from the Dr. Fischer foundation

e-mail: d.a.godefrooij@umcutrecht.nl
But what are the costs of this reduction???
Methods: stochastic Markov-type model

- Two identical cohorts of 1000 patients (2000 eyes) were created:
  - One cohort treated with CXL
  - One cohort no CXL treatment
- Patients followed over the course of a lifetime
- Disease progression based on two RCTs:
  - Wittig-Silva et al\(^1\)
  - O’Brart et al\(^2\)
- Chance of keratoplasty based on CLEK study\(^3\)
- Costs of keratoplasty and CXL based on Dutch studies\(^4,5\)

Results: Cost-effectiveness of CXL

Every 13 CXL treatments prevent 1 corneal transplantation

CXL treatment prevents deterioration of visual acuity and quality of life

Every €54,384 / $59,822 invested in CXL results in the gain of 1 QALY (Quality-Adjusted Life Year)

Contact: d.a.godefrooij@umcutrecht.nl
Conclusions on cost-effectiveness of CXL

Quality of life is severely affected by bad visual acuity\textsuperscript{1}

CXL is a cost-effective method to prevent:
- corneal transplantations
- deterioration of visual acuity
- loss of quality of life

Opportunity:
Treating patients in an earlier disease phase improves cost-effectiveness

\textsuperscript{1} Godefrooij DA, de Wit GA, Mangen MJ, Wisse RPL. Comment on “Cost effectiveness of collagen crosslinking for progressive keratoconus in the UK NHS.” \textit{Eye}. 2016:1-2.
Questions? Ask the author!

Contact: d.a.godefrooij@umcutrecht.nl