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Corneal transparency course after corneal collagen cross linking for keratoconus

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DISCLOSURE: None of the authors have a financial interest in any of the products or devices noted.

Methods:

Purpose of the study was to objectivize corneal haze after corneal cross linking in keratoconus, throughout 6 months follow up together with evaluation of changes in corneal thickness

-18 eyes of 15 patients were included

-Dresden protocol was performed (16 eyes isotonic Riboflavin, 2 eyes hypotonic solution)

-Postop therapy included combination of antibiotic- corticosteroid drops for 4 week /2 weeks 4x daily, 2 weeks 2x daily) and afterwards FML 2x daily for 2 weeks together with arteficial tears

-regular check ups were performed every day until complete reepitelisation, every two weeks during the corticosteroid therapy and afterwards every month

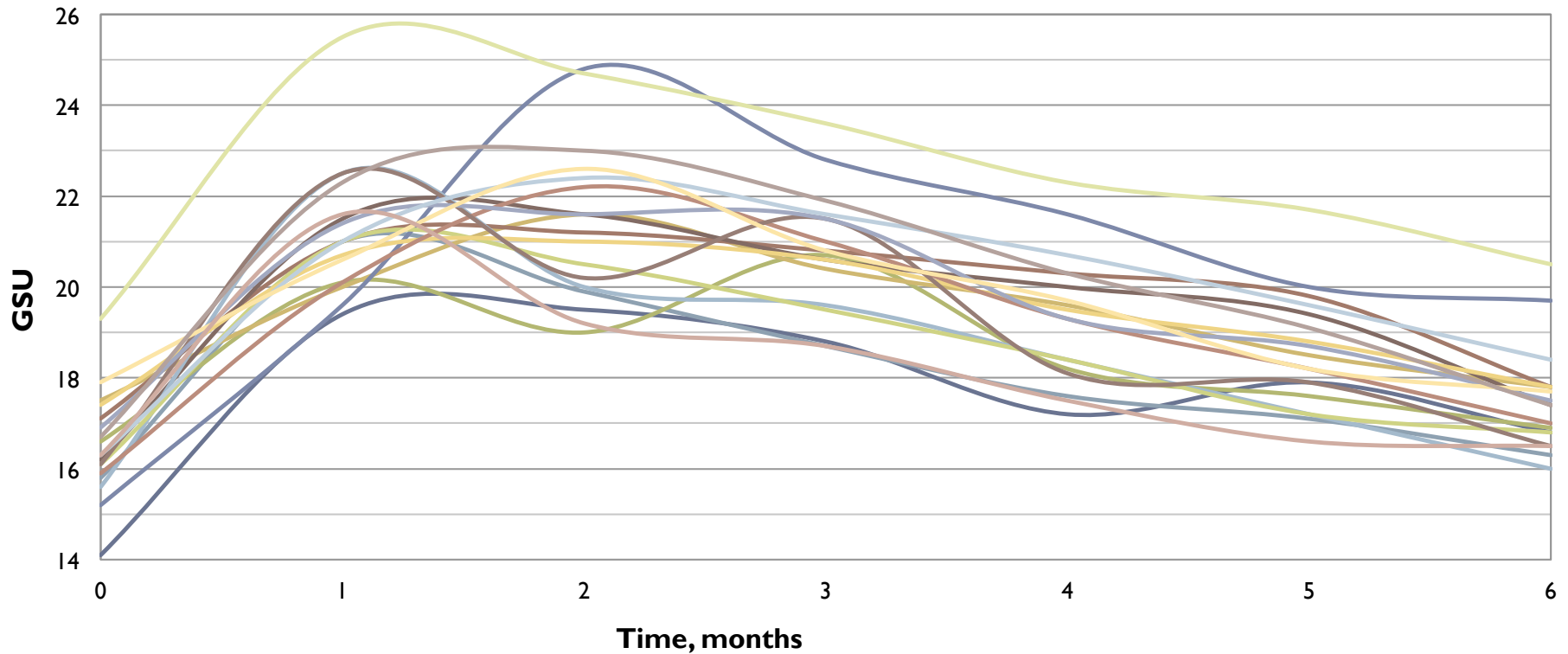
-UCVA, BCVA, IOP, Clinical examination on every visit. Corneal thickness, curvature and corneal density (standardized grayscale units -GSU) were measured using Oculus Pentacam

Results

Mean preoperative corneal density was 16.5 ± 1.28 GSU

In the first month postoperatively significantly increased to 21.2 ± 1.99 GSU

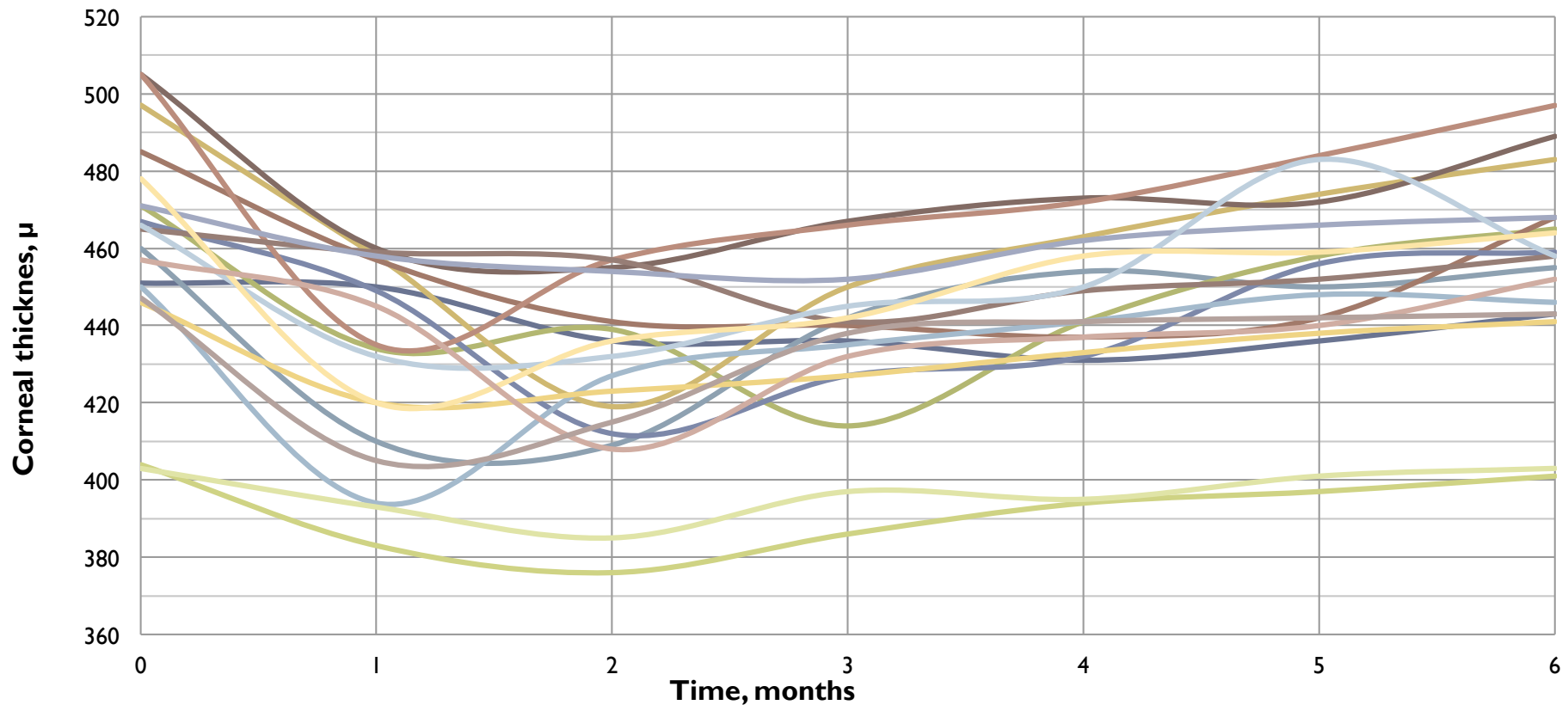
($p < 0.0001$), stabilized to a values higher then baseline 17.6 ± 1.3 GSU in the period of 6 months (P=0.0152)



Corneal density changes over 6 months

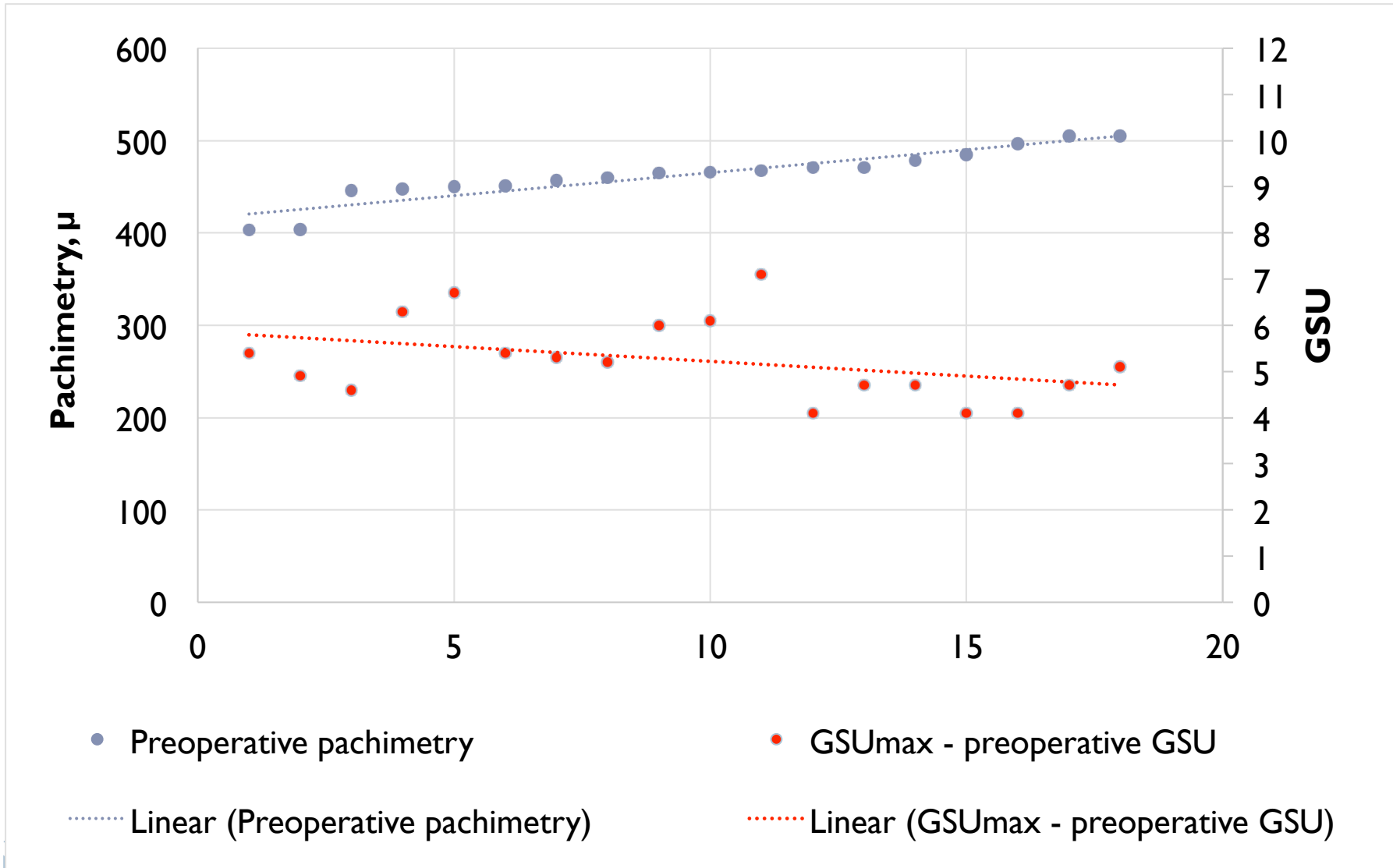
Results

Corneal thickness decreased immediately after CXL and continued to fall until the second month then started to grow and almost reached preoperative values at the end of sixth month.



Pachymetry changes over 6 months

Preoperative pachymetry and GSUmax correlation



Conclusion

- ▶ The course of corneal haze was quantified by Oculus Pentacam even in situations where clinically it could not be measured.
- ▶ It reaches the highest values in the first month postoperatively and gradually decreases in the next six months.
- ▶ Corneal thickness reaches the lowest values in the second month postoperatively and up to the sixth month it still does not reach the baseline values.
- ▶ There is negative connection between the preoperative corneal thickness and the maximal haze postoperatively