

Risk factor analysis for PACK-CXL treatment failure in small animal patients.

M.E. Kowalska^{1,2}, A.K. Shukla¹, K. Arteaga³, M. Crasta³, C. Dixon⁴, F. Famose⁵, S. Hartnack² and S.A. Pot¹

¹ Ophthalmology Section, Equine Department ² Epidemiology Section, Vetsuisse Faculty, University of Zurich, Zurich, Switzerland ³ Anicura VisionVet Eye Clinic, Bologna, Italy ⁴ Veterinary Vision, Penrith, United Kingdom ⁵ Clinique Vétérinaire d'Ophtalmologie Spécialisée, Blagnac, France

Purpose

Infectious keratitis is a common ophthalmic condition in canine and feline patients. Risk factors for treatment failure following photoactivated chromophore for keratitis – corneal cross-linking (PACK-CXL) in canine and feline patients are not well defined.

Results

- Overall success PACK-CXL treatment: 90% (95%CI: 88-92%).
- PACK-CXL treatment acceleration is the only investigated variable directly associated with treatment outcome (ABN).
- Dogs receiving eye drop therapy + PACK-CXL epithelialize faster than dogs receiving PACK-CXL only (Kaplan-Meier survival analysis: figure 2).
- A history of pre-existing ocular disease or previous ocular surgery, hypopyon or a larger ulcer size at presentation delay epithelization (Cox proportional hazard regression analysis).

Conclusions

- PACK-CXL is a highly successful adjunctive treatment for the management of infectious keratitis in dogs and cats.
- Canine patients may benefit from accelerated PACK-CXL; the reasons for this apparent positive impact on treatment outcome remain unclear.

Methods



Retrospective study

- 4 clinics
- 2011-2021
- 671 eyes from 668 dogs
- 154 eyes from 153 cats



Collected data

- Patient factors
- Ulcer parameters
- CXL protocol parameters
- Treatment outcome



1° treatment outcome

- Tx success: no deviation from treatment plan
- Additive Bayesian Network (ABN) analysis to evaluate complex relationships



2° treatment outcome

- Time to epithelization
- Kaplan-Meier analysis
- Cox regression analysis

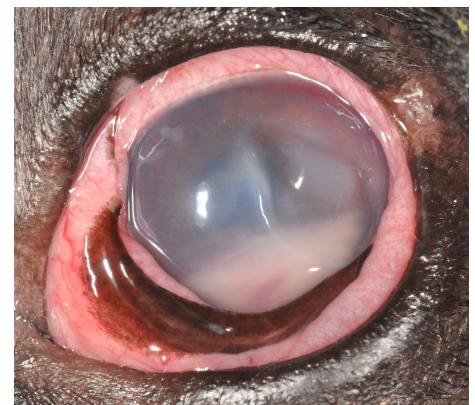


Figure 1: Infectious keratitis in a dog

Figure 2: Time to epithelization (Kaplan-Meier survival curve)

