



Therapeutic effect of umbilical cord serum eyedrops for corneal epithelial defect: a pilot study

Xavier Peyrecave, DVM

Equine Clinic, Vetagro Sup, University of Lyon, 1 avenue Bourgelat, 69280 Marcy l'Etoile, France

xavier.peyrecave@vetagro-sup.fr

Xavier Peyrecave DVM, Isabelle Desjardins DVM, Dipl. ACVIM-LA, ECEIM

Introduction

Corneal ulcers are common in equine medicine because of the prominence of the ocular globe. A small percentage of ulcers do not heal within the expected time frame due to abnormal epithelialization. Umbilical cord serum contains many growth and neurotrophic factors and essential tear components, and is effective in the treatment of persistent epithelial defects in human beings. The objective of this study was to assess the safety and therapeutic effect of heterologous equine umbilical cord serum (HECS) eye drops in clinical cases of equine ulcerative keratitis that was non-responsive to usual therapy (local antibiotics, atropine, systemic flunixin).

Material and Methods

Horses with corneal ulcerative defects of at least 2 mm² were accepted. An ophthalmic clinical scoring, fluorescein testing, tonometry and ultrasonography were performed on admission and every other day. The ulcerated area was measured by a standardized measure confirmed by picture analysis using ImageJ software. Time to complete epithelisation relying on negative fluorescein testing and direct ophthalmoscopic examination was recorded.

Results

Six horses were included. The age ranged from 3 months to 17 years old. The ulcerative lesion was present for 4 to 186 days. The median ulcerative area was 37,2 mm². One case presented a secondary stromal abscess and 5 horses an anterior uveitis. The HECS drops* were directly instilled twice daily for 8 to 15 days, and added to the conventional therapy (antimicrobials, atropine and systemic flunixin). One hundred percent of the lesions healed properly within 13 to 42 days (median 23,5 days).

No adverse effect was noticed. No recurrence was observed within 3 weeks after discharge.

Discussion/Conclusion

Topical HECS appears safe and effective in treating complicated or non-healing ulcers. A blinded randomized controlled study is warranted to compare the healing time allowed by HECS compared to conventional therapy.

* Kindly provided by Vetbiobank®

Ollivier FJ, Brooks DE, Kallberg ME, Komaromy AM, Lassaline ME, Andrew SE, et al. Evaluation of various compounds to inhibit activity of matrix metalloproteinases in the tear film of horses with ulcerative keratitis. *Am J Vet Res.* 2003;64(9):1081–1087.

Michau TM, Schwabenton B, Davidson MG, Gilger BC. Superficial, nonhealing corneal ulcers in horses: 23 cases (1989–2003). *Vet Ophthalmol* 2003;6(4):291–297.

Yoon K-C, Choi W, You I-C, Choi J. Application of umbilical cord serum eyedrops for recurrent corneal erosions. *Cornea.* 2011;30(7):744–748.