Rogue Wave
A case of equine eosinophilic keratitis

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Rogue Wave

- 15-year-old TB gelding
- 5 day history
  - Epiphora OU
  - Ocular discharge OU
  - Blepharospasm OU
- Treatment
  - Atropine sulfate (1%) q24 OU
  - NeoPolyBac q8 OU
Ophthalmic Examination

- Menace, dazzle positive OU
- Moderate blepharospasm OU
- Chemosis, conjunctival hyperemia OU
- Yellow caseous mucoid discharge OU
- Positive fluorescein stain OU
  - Inferionasal, 5x7 mm
  - Pink, raised surface
- Intraocular pressure WNL OU
  - OS 19 mmHg
  - OD 18 mmHg
- Atropinized pupil OU
- Trace flare OU
- Lens, fundus WNL OU
Diagnostics

- Corneal culture & sensitivity
  - No growth

- Corneal cytology
  - Abundant eosinophils
  - Few mast cells
  - Scant neutrophils, lymphocytes
  - No bacteria or fungal hyphae
Medical Therapy

- **Dexamethasone**
  - 20 mg q24 IV day 1
  - 15 mg q24 IV day 2
  - 10 mg q24 PO day 3
  - 5 mg SID PO day 4-7

- **Cetirizine**
  - 0.4 mg/kg q12 PO

- **Oxytetracycline o/o**
  - q8 OU

- **Itraconazole/DMSO o/o**
  - q8 OU

- **Flunixin meglumine**
  - 1 mg/kg q12 PO 3 days
  - 0.5 mg/kg q12 PO 3 days
  - 0.5 mg/kg q24 PO 3 days
Follow Up

One week
- Corneal lesions decreased in size, less raised
  - Negative fluorescein OD
  - 2 mm OS

Two weeks
- Continued improvement OU
  - <1mm stain uptake OS
- Lesions flat, white
- Comfortable without NSAIDs, topical mydriatic, corticosteroids

Five weeks
- Negative fluorescein OU
- Corneal opacity
Eosinophilic Keratitis

- Brooks, *Vet Clin NA Eq Prac*, 2004
- Cutler, *Vet Clin NA Eq Prac*, 2004
- Matthews & Gilger, *EVJ Suppl*, 2010
- Kafarnik, *UK Vet*, 2010

- Unilateral or bilateral
- Corneal ulceration, edema
- White corneal plaques
- Superficial stromal, perilimbal yellow infiltrate
- Beneath 3rd eyelid > ventrolateral, ventrodorsal
- ± Conjunctivitis, caseous mucoid discharge
Eosinophilic Keratitis

- Seasonal
  - Early or late summer
- Well managed horses
  - Vaccinations, deworming protocol
- Cytology
  - >90% eosinophils
- Treatment
  - Topical corticosteroids
  - Topical NSAIDs
  - Topical antimicrobial, antifungal (prophylactic)
  - Topical mast-cell stabilizers
  - Superficial keratectomy

- Duration
- Recurrence
Environmental Management

- Disease may be related to environmental allergen hypersensitivity
- Allergen $\rightarrow$ mast cell degranulation $\rightarrow$ eosinophil recruitment
- Decrease exposure to allergens
  - Fly mask
  - Fly repellant
  - Night turnout
  - 19 STB mares, single farm
  - July-August 2009
  - Pasture maintenance, fly masks, stall confinement, fly repellant
  - Topical ophthalmic antibiotic to most severe cases
Cetirizine

- H1-antagonist
- Treatment of seasonal/perennial allergic rhinitis, pruritis and chronic idiopathic urticaria in humans
- Oral administration in horses
  - 0.2-0.4 mg/kg produced plasma concentrations similar to concentrations humans
- Inhibition of histamine-induced cutaneous wheal formation
- Randomized, placebo controlled, double blinded field study 0.4 mg/kg, q12, 3 weeks no difference in IBH dermatitis
Discussion

- Topical vs. systemic corticosteroids
- Length of treatment, recurrence
- Regional variation
- Cetirizine
- Other immunosuppressive therapy
- Surgical intervention
  - Superficial keratectomy
  - Diamond ball burr
  - Other