# Antifungal Therapy in Equine Ocular Mycotic Infections

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**KEYWORDS**

• Antifungal • Horse • Equine • Keratomycosis • Fungal keratitis • Mycotic infection

**KEY POINTS**

- Keratomycosis is the most common ocular fungal infection treated in equine medicine; however, a diverse range of mycotic infections, affecting numerous other ocular tissues, may also be encountered in clinical practice.
- A comprehensive knowledge of the relative characteristics and properties of the antifungal medications used in equine ophthalmology is essential to selecting an optimal treatment strategy for a particular case.
- Clinicians must select both an appropriate antifungal medication and an effective medication administration route to achieve the best outcome.
- Many newer medication delivery methods and devices are now available for the treatment of ocular fungal infections in horses and can contribute to an improved outcome in select situations.

## INTRODUCTION

Fungi are frequent and clinically important causes of ocular infections in the horse. Keratomycosis is the most common ocular fungal infection treated in equine medicine; however, a diverse range of mycotic infections affecting numerous other ocular tissues may also be encountered in clinical practice. Many equine mycoses are diagnostic and therapeutic challenges for the clinician. Prompt and appropriate treatment is essential to minimize morbidity and reduce the likelihood of vision loss associated with ocular fungal infections.

The antifungal pharmaceutical treatment options available to veterinarians are more limited when compared with the range of antimicrobials used as therapy for equine bacterial infections. A thorough knowledge of the relative characteristics and properties of the antifungal medications used in equine ophthalmology is essential to

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selecting an optimal treatment strategy for a particular case. This includes selection of both an appropriate antifungal medication and an effective medication administration route. In addition, newer medication delivery methods and devices are now available for the treatment of ocular fungal infections in horses and can contribute to an improved outcome in select situations.

## TYPES OF EQUINE OCULAR FUNGAL INFECTIONS

### *Keratomycosis*

Keratomycosis is a relatively common ocular disease in horses compared with most other domestic animal species, and it is the most clinically important equine ocular fungal infection.[1–3] The high prevalence of fungal keratitis in horses is believed to result from host and environmental factors that increase exposure and susceptibility of the equine cornea to fungi.[4] Risk factors identified for development of fungal keratitis in the horse include prior treatment with topical ocular antimicrobials, prior treatment with topical ocular corticosteroids, vegetative corneal foreign bodies, and external corneal trauma.[1–3,5] Keratomycosis is a vision and globe-threatening infection that must be aggressively managed to achieve an optimal functional outcome. The clinical features, progression, and response to treatment can vary greatly among individual equine cases and the therapeutic plan must be tailored to the individual horse.[1–7]

The clinical presentation and appearance of keratomycosis can differ dramatically between horses. Fungal infections of the cornea may be ulcerative or nonulcerative and can affect superficial or deep tissue layers of the cornea. General clinical forms of fungal keratitis that occur in the horse include epithelial keratopathies, subepithelial infiltrates, superficial corneal ulcers, deep corneal ulcers (that can progress to descemetoceles or corneal perforations), and stromal abscesses.[8–11] Specific clinical findings during ophthalmic examination that suggest a diagnosis of fungal keratitis in the horse include white, yellow, green, brown, or black corneal plaques, often with a feathery or fluffy appearance; corneal satellite lesions; corneal furrowing; and deep stromal abscessation (**Fig. 1**).[1,4,6] These examination findings should increase the suspicion of fungal infection, but clinical features alone should not be relied on to suggest a diagnosis of fungal keratitis in horses. Diagnostic evaluation for fungal involvement should be pursued for all cases of ulcerative and nonulcerative keratitis in horses when the cause is not readily apparent from historical information or clinical ophthalmic examination findings.

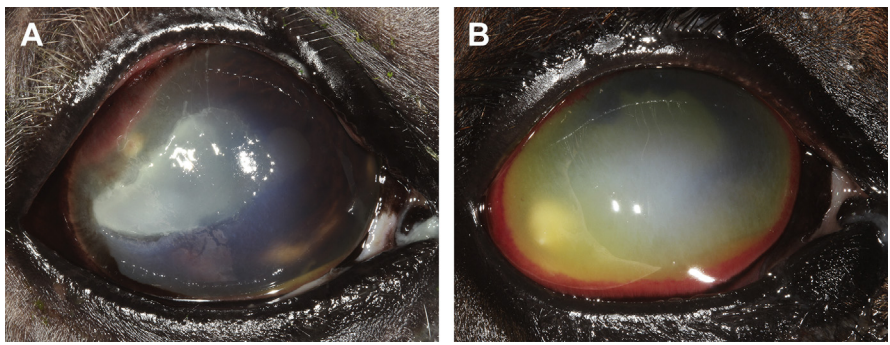


**Fig. 1.** Clinical photographs of equine keratomycosis in 2 horses. Fungal corneal ulcer (*A*) associated with a white corneal fungal plaque and mild hypopyon. Fungal stromal abscess (*B*) associated with marked keratitis and anterior uveitis.