

DECREASED TEAR PRODUCTION IN DOGS

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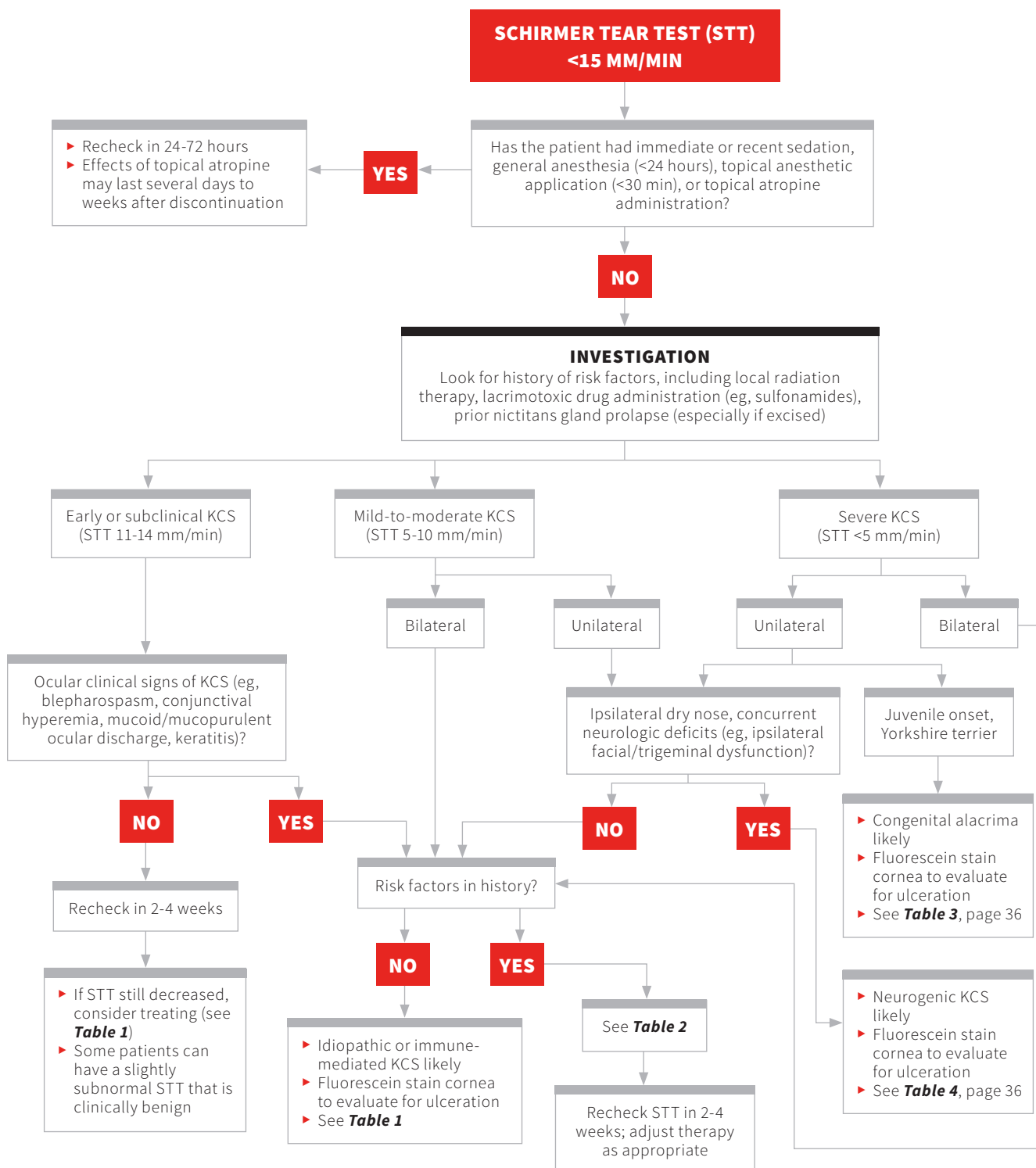


TABLE 1**TREATMENT FOR IDIOPATHIC/IMMUNE-MEDIATED KCS**

Treatment	Application
Topical ophthalmic cyclosporine (1%-2% solution, 0.2% ointment), tacrolimus (0.03%)	Apply to affected eye(s) q12h; lifelong therapy required
Topical lacrimomimetic PRN (ie, artificial tears; products containing sodium hyaluronate may be particularly beneficial)	Apply until signs resolve (usually unnecessary when STT >8 mm/min)
Topical ophthalmic broad-spectrum antibiotic (eg, neomycin, polymyxin B, gramicidin solution)	Apply to affected eye(s) q8h for 10-14 days or until corneal ulceration (if present) is healed
Topical mucolytic medication (2.5%-5% <i>N</i> -acetylcysteine)	Apply q6-8h if copious mucopurulent discharge is present
Warm compress to eyelids, periocular hair trimming, facial cleaning	Apply as warranted

TABLE 2**TREATMENT FOR KCS SECONDARY TO RISK FACTORS**

Treatment	Application
Discontinue lacrimotoxic medication if suspected in KCS pathogenesis	N/A
Topical ophthalmic cyclosporine or tacrolimus can be attempted (see Table 1) but is generally ineffective in these cases	Apply to affected eye(s) q12h
Topical lacrimomimetic PRN (ie, artificial tears; products containing sodium hyaluronate may be particularly beneficial)	Apply until signs resolve (usually unnecessary when STT >8 mm/min)
Topical ophthalmic broad-spectrum antibiotic (eg, neomycin, polymyxin B, gramicidin solution)	Apply to affected eye(s) q8h for 10-14 days or until corneal ulceration (if present) is healed
Topical mucolytic medication (2.5%-5% <i>N</i> -acetylcysteine)	Apply q6-8h if copious mucopurulent discharge is present
Warm compress to eyelids, periocular hair trimming, facial cleaning	Apply as warranted

KCS = keratoconjunctivitis sicca

STT = Schirmer tear test

TABLE 3

TREATMENT FOR CONGENITAL ALACRIMA

Treatment	Application
Topical lacrimomimetic PRN (ie, artificial tears; products containing sodium hyaluronate may be particularly beneficial)	Apply until signs resolve (usually necessary when STT >8 mm/min)
Topical ophthalmic broad-spectrum antibiotic (eg, neomycin, polymyxin B, gramicidin solution)	Apply to affected eye(s) q8h for 10-14 days or until corneal ulceration (if present) is healed
Topical mucolytic medication (2.5%-5% <i>N</i> -acetylcysteine)	Apply q6-8h if copious mucopurulent discharge is present
Warm compress to eyelids, periocular hair trimming, facial cleaning	Apply as warranted

TABLE 4

TREATMENT FOR NEUROGENIC KCS

Treatment	Application
Topical ophthalmic 0.2% pilocarpine q6-8h or 2% oral pilocarpine	Initial oral dose, 2 drops/20 pounds (10 kg) body weight q12h; increase 1 drop at a time to effect or until systemic toxicity (eg, salivation, vomiting, diarrhea) is evident
Topical lacrimomimetic PRN (ie, artificial tears; products containing sodium hyaluronate may be particularly beneficial)	Apply until signs resolve (usually unnecessary when STT >8 mm/min)
Topical ophthalmic broad-spectrum antibiotic (eg, neomycin, polymyxin B, gramicidin solution)	Apply to affected eye(s) q8h for 10-14 days or until corneal ulceration (if present) is healed
Topical mucolytic medication (2.5%-5% <i>N</i> -acetylcysteine)	Apply q6-8h if copious mucopurulent discharge is present
Monitor for blepharospasm	N/A

*Spontaneous resolution may occur; therapy can be discontinued after resolution.

Suggested Reading

Guiliano EA. Diseases and surgery of the canine lacrimal secretory system. In: Gelatt KN, Gilger BC, Kern TJ, eds. *Veterinary Ophthalmology*. 5th ed. Oxford, UK: John Wiley & Sons; 2013:912-944.

Matheis FL, Walser-Reinhardt L, Spiess BM. Canine neurogenic keratoconjunctivitis sicca: 11 cases (2006-2010). *Vet Ophthalmol*. 2012;15(4):288-290.

Miller PE. Lacrimal system. In: Maggs DJ, Miller PE, Ofri R, eds. *Slatter's Fundamentals of Veterinary Ophthalmology*. 5th ed. St. Louis, MO: Elsevier Saunders; 2013:165-183.

Westermeyer HD, Ward DA, Abrams K. Breed predisposition to congenital alacrima in dogs. *Vet Ophthalmol*. 2009;12(1):1-5.

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STT = Schirmer tear test