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Dry Eye Syndrome

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Dry eye syndrome, or keratoconjunctivitis sicca (KCS) is a condition of significant epidemiologic importance. It affects millions of people worldwide, with a marked female predominance, especially among postmenopausal women. The condition may be accompanied by dry mouth and may be associated with systemic diseases such as rheumatoid arthritis or systemic lupus erythematosus. In many instances, it is far more than a simple “nuisance” problem. It has the potential to cause serious ocular complications, beginning with the formation of dry spots on the cornea and progressing to persistent epithelial defects that resist healing, and, in some cases, to corneal ulceration and even frank perforation.

The mainstay of treatment for dry eye syndrome has long been natural tear replacement with artificial tears (lubricants). Although this remains an important component of dry eye management, it is neither the only nor necessarily the most important approach. Other conservative measures, such as warm compresses twice daily, gentle eyelid massage, and side-shield panels on spectacles, can also help improve the quality and quantity of natural tears. Additionally, these measures reduce tear evaporation from the ocular surface. Warm compresses and eyelid massage help dilate the meibomian gland (oil glands in the eyelids) ductules and liquefy thickened secretions, promoting continuous oil flow into the tear film and resulting in improved tear film stability and ocular surface lubrication. Punctal plugs may be used to enhance tear retention in more severe cases. Punctal plugs block the drainage of tears from the eye into the nose through the nasolacrimal duct. Autologous serum tears, typically prepared as a 20–50% solution, are another treatment option for severe dry eye and are derived from the patient’s own blood. Additionally, dietary supplementation with foods rich in omega-3 fatty acids, such as cold-water fish (e.g., salmon), crustaceans (e.g., shrimp and crab), flaxseed oil, green leafy vegetable, walnut may help restore the normal health and function of dysfunctional lacrimal and meibomian glands.

Topical anti-inflammatory and immunomodulatory agents play an important role in many patients with dry eye, as lacrimal gland inflammation has been shown to impair normal tear

production in a significant proportion of cases. Topical corticosteroids (Alrex), topical cyclosporine 0.05% (Restasis) and 0.09% (Cequa), topical tacrolimus 0.03%, and lifitegrast 5% (Xiidra) have been shown to be beneficial in such patients.

The LipiFlow procedure is another option for the treatment of meibomian gland dysfunction and blepharitis. Finally, specially designed scleral lenses can help retain a fluid reservoir over the cornea in patients with severe aqueous tear deficiency.