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The Best Vision Newsletter

New Approaches in the Treatment of Dry Eye

DRY EYE is often described as "walking in the Sahara Desert and sticking your head in the sand – with eyes open". Its cause is a disorder of the tear film due to tear deficiency or excessive evaporation causing damage to the interpalpebral ocular surface associated with ocular discomfort. Preliminary evaluation of dry eye patients requires assessing tear quantity and quality, and treating accordingly with artificial tears, gels, ointments, punctal plugs, and/or warm compresses. Treatment strategies have evolved further, however, with our improved understanding of the inflammatory cascade that contributes to dry eye development.

Recent clinical research has clarified some details regarding the inflammatory component of dry eye disease. We now understand that the ocular surface/ lacrimal gland/ neural feedback unit requires proper function of both the lacrimal and accessory lacrimal glands, and that dry eye-associated inflammation may lead to T-cell activation and cytokine secretion into the tears. This disrupts epithelial cell function, interferes with mucin production, and may result in decreased corneal sensitivity. The end result of this inflammation is dry eye-associated ocular surface toxicity. There is some evidence that these effects may be monitored through tear concentration of lactoferrin, a key molecule that protects against infection, modulates the inflammatory response, and controls cell growth.

Recent, more specific strategies to treat dry eye focus on the ability to alter this inflammatory response. Topical steroids, used as a several week pulse or a low-dose one-drop daily regimen, can inhibit this inflammation and improve symptoms (these patients do require close monitoring). Tetracyclines, such as Doxycycline 20 mg po BID, may also be helpful due to their anti-bacterial and anti-inflammatory effects, which reduce the production of inflammatory free fatty acids from meibomian glands. Clinical research is currently evaluating the efficacy and safety profile of topical cyclosporine A, an immunomodulatory agent that inhibits T-cell mediated inflammation. Preliminary studies involving cyclosporine demonstrate an improvement in disease severity, especially in those with punctate keratitis and severe symptoms. Furthermore, the oral nutraceutical treatment HydroEye appears to have significant potential to improve the aqueous and mucin components of the tear film through omega-3 and omega-6 fatty acids in addition to a blend of mucin complex and nutrient co-factors.

Artificial tears, gels, ointments, punctal occlusion, and warm compresses remain our first defense against dry eye. Our increasing understanding of the inflammatory aspects of this disease has emphasized the importance of anti-inflammatory treatment. Continued research is expected to further our understanding of dry eye disease and refine its treatment.

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We dedicate ourselves to enhancing the quality of life for every individual whose life we touch, by helping each to see his or her best, and by preserving our patients' vision and eye health throughout life.

We look forward to seeing you at one of our upcoming Continuing Education seminars.

Please contact

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Thank you for your support!

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