Battling dry eye with nutritional supplements

by Clifford Salinger, MD

Dr. Salinger presents a case study on this disease that is gaining awareness

Our understanding of the etiology and treatment of dry eye has grown exponentially in the last few years, but a quick and easy fix has yet to emerge. There is overwhelming evidence demonstrating the efficacy and viability of nutritional supplements when combined with comprehensive care; however, both patient and doctor must exercise patience and allow sufficient time before seeing measurable clinical results.

Nutritional supplements, lid hygiene, and hot compresses serve as the foundation of our treatment plan for dry eye patients. Additional treatments or pharmaceuticals are added or subtracted as needed beyond this essential infrastructure. Although the treatment takes time and requires some adjustments along the way, we have had great success with this approach, as is demonstrated in this case study.

Case history
A 62-year-old patient presented with complaints of burning sensation, irritated eyes, and intermittent blurry vision. The initial examination revealed:

- Moderately early tear break-up time (TBUT)
- Mild superficial punctate keratitis on the inferior aspect of both corneas
- Mild to moderate conjunctival punctate staining
- Mild to moderate redundant conjunctival folds

TearLab Osmolarity Test (TearLab, San Diego): 340 mOsm right eye, 355 mOsm left eye

Lipid content (LipiView, TearScience, Morrisville, North Carolina): 74 ICU right eye, 88 ICU left eye

Inflammation detected using InflammaDry (Rapid Pathogen Screening, Sarasota, Florida)

At the time of examination, the patient’s treatment regimen included the use of preservative-free artificial tears and three TheraTears Eye Nutrition gel caps (Akorn, Ann Arbor, Michigan) per day. One week prior to the exam, the patient had ceased taking fexofenadine and reported an increase in irritation as a result.

A long history of failed pharmacological and surgical interventions included Restasis (cyclosporine, Allergan, Dublin), wherein the patient described worsening symptoms, and punctal plugs, which became dislodged. The patient underwent laser punctal closure; however, the puncta had slightly reopened, leaving a pinpoint opening in both lower lids.

New treatment protocol
The patient was instructed to implement a new treatment protocol including: two HydroEye gel caps (ScienceBased Health, Houston) twice a day (discontinue use of TheraTears), daily administration of a hot compress and OCuSOFT lid wipes (OCuSOFT, Rosenberg, Texas), Lotemax drops (lote prednol, Bausch & Lomb, Bridgewater, New Jersey) twice a day, AzaSite (azithromycin, Akorn) to be applied to the outside of both the upper and lower lids at bedtime, and to continue using preservative-free artificial tears as needed.

Shortly after beginning the new regimen, the patient called with complaints about Lotemax and discontinued use. At her 1-month follow-up appointment, she reported a moderate level of improvement, but was still experiencing irritation and other dry eye symptoms. A tear osmolarity test demonstrated improvement from 340 to 302 mOsm in the right eye and 355 to 306 mOsm in the left eye.

We performed LipiFlow treatment (TearScience) 1 week later, and the patient continued all other therapy as prescribed, plus the addition of 0.1% fluorometholone eye drops once daily and exclusion of Lotemax.

At the 10-week follow-up appointment, the patient reported a 50% improvement in symptoms compared to her initial visit. The examination revealed a more stable TBUT, less punctate keratitis along the inferior cornea, and less punctate conjunctival staining in the interpalpebral area. The patient was instructed to continue the prescribed lid hygiene routine, reduce 0.1% fluorometholone eye drops to PRN usage, and to discontinue taking AzaSite after finishing the remaining supply.

The patient has consistently continued treatment as directed, rarely employing the use of the steroid eye drop, without any other prescription medications. Over the course of the next several months she reported a noticeable improvement in symptoms. She was very pleased with the overall improvement, with only occasional episodes of mild discomfort.

Almost 2 years after initiating treatment, she began wearing contact lenses comfortably all day. Prior to this treatment, she could only wear contact lenses for a very limited amount of time because the irritation rendered her unable to read, work on the computer, or engage in any long-term visual tasks. The patient’s conjunctivochalasis has not progressed, nor has it resolved. This was not a significant contributing factor to her discomfort as her symptoms improved in spite of the continued presence of the chalasis.

Alternative solution
Inflammation comes from many factors, including hyperosmolality; the friction caused by elevated, redundant conjunctival folds in conjunctivochalasis; T-cell lymphocyte infiltration of the lacrimal glands; and other sources. It is essential to bring inflammation under control as quickly as possible so that it can cause irreversible damage to the ocular surface.

Supplemental omega fatty acids have been shown to reduce inflammation and improve the overall quality of tears. There is a significant and growing body of evidence that shows that the unique anti-inflammatory omega-6 gamma-linolenic acid (GLA) is highly effective for treating patients with dry eye.1,2,3,4 When combined with well-known omega-3 fatty acids such as eicosapentaenoic acid (EPA), they create a powerful effect of decreasing pro-inflammatory arachidonic acid and prostaglandin E2.1,4 A well-designed, randomized, placebo-controlled study showed that nutritional supplements containing GLA and EPA reduced inflammatory biomarkers,
improved corneal surface smoothness, and improved symptoms of dry eye.

In our case study, the effects of the nutritional supplements clearly helped to improve the patient’s symptoms sufficiently enough to avoid surgery, despite the presence of conjunctivochalasis. Once her dry eye symptoms were relieved, the conjunctivochalasis by itself was not bothersome. Although relief and healing was not instant, the improvement is obvious when observed over the long term.

Nutritional supplements used in tandem with a comprehensive care plan can offer many patients a long-term, natural way to manage dry eye and their symptoms. Although not a cure, reduced inflammation and the improved quality and quantity of tear production can provide patients suffering from dry eye more freedom within their environment, their daily activities, and a better quality of life.

**References**