

Resources-Doctor-DE-Smith Study

Study Title: Penetration of rTG Omega-3 into the Meibomian Glands after Oral Administration
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Sponsor: None
Study Objective: To investigate the potential effect of the oral supplementation of rTG omega-3 fatty acids on lipid composition of meibum, Tear Breakup Time (TBUT), Tear Osmolarity and Corneal Staining in patients with symptoms of dry eye. <ul style="list-style-type: none">• Design and Participants: Twenty patients with blepharitis were recruited from the clinic to participate in the study. Baseline studies were performed at the initial visit. These included:<ul style="list-style-type: none">• completion of the ocular surface disease index (OSDI) to score subjective symptoms,• slit lamp examination,• tear breakup time,• evaluation of corneal staining,• tear osmolarity using the TearLab system,• EPA and DHA red blood cell saturation using the omega 3 index by OmegaQuant,• expression of meibum and meibum content analysis. This was performed by probing the meibomian glands with a Maskin probe by Rhein medical. The meibum was then placed on a slide and allowed to dry. It was then evaluated by Sherlock system by Microbial ID. <p>The patients were then started on 4000 mg of rTG Omega 3 daily (Physician Recommended Nutraceuticals, Plymouth Meeting, PA) . four 1000 mg capsules contained 1680 mg of eicosapentaenoic acid, 560 mg of docosahexaenoic acid, and 1000 mg of Vitamin D3.</p> <p>The patients were reevaluated at 4 weeks with all the above testing except for the OmegaQuant and the meibum analysis. At 8 weeks all the testing was repeated with one variation. The Mastroda paddle was used to collect meibomian gland secretions.</p>
Primary Outcome: The administration of rTG Omega-3s (EPA/DHA) shows a positive clinical outcome in meibum composition in 4-8 weeks.
Results: <ul style="list-style-type: none">• Patients EPA levels increased significantly in the RBCs from baseline and 8 weeks,• DHA increased in the RBCs from baseline and 8 weeks,• Arachidonic acid (Omega-6) a direct precursor to pro-inflammatory eicosanoid derivatives, decreased significantly from baseline and 8 weeks.• The overall Omega-3 index increased significantly in the RBCs from baseline to 8 weeks.

Conclusions:

Dry Eye Omega Benefits changes the composition of the oil in the meibum, which contributes to the lipid layer of the tear.