

The efficacy of MiBo Thermoflo in treatment of meibomian gland dysfunction

*Charles G. Connor*¹, *Srihari Narayanan*¹, *William L. Miller*¹ ¹Rosenberg School of Optometry, University of the Incarnate Word, San Antonio, Texas, United States

Disclosure Block: Charles G. Connor, None; Srihari Narayanan, None; William L. Miller, None

Purpose: Eyelid warming with massage to enhance meibomian gland expression has been the backbone of managing Meibomian Gland Dysfunction (MGD). Pain Point Medical has developed the MiBoFlo ThermoFlo (MIBO) as a new therapeutic approach for MGD related dry eye. The MIBO gently massages the outer area of the eyelids with continuous controlled heat. The procedure should help liquefy the secretions of the Meibomian glands resulting in thinner, clearer oils and reduced tear film evaporation. This study examines of the efficacy a single MIBO treatment on MGD.

Methods: Thirteen patients (8 male, 5 female; Average age 30+/- 9.49 yrs) with MGD were treated with MIBO for 12 minutes per eyelid. Only upper eyelids were treated per manufacturer protocol. Ultrasound gel was applied onto the heating pad of the MIBO which was then applied to the patient's closed lids. The treatment does not require anesthesia. Baseline data included: OSDI questionnaire, MGD and Blepharitis scores based on the Effron Scale, TBUT and NITBUT as well as meniscus height. These measures were repeated 4 weeks later. The results were analyzed with a student T-test with post hoc test for significance.

Results: All thirteen patients reported immediate improvement in ocular comfort after treatment. The OSDI scores revealed a reduction in symptoms from 33.46+/-14.23 to 26.35+/-14.31. Both the MGD and Blepharitis scores showed statistically significant improvement 4 weeks post MIBO treatment. MGD improved significantly 0.88+/- 0.84 to 0.32+/- 0.61 (p=0.05). Blepharitis score improved significantly 0.96+/-0.19 to 0.65 +/- 0.65 (p=0.05). TBUT increased from 5.83 sec +/-2.3 to 6.61 +/- 1.64sec and the NITBUT increased from 9.31 sec+/- 6.5 to 11.34 +/- 5.59 sec. Tear meniscus rose from 0.25+/-0.04 to 0.31+/- 0.11.

Conclusions: MIBO treatment resulted in statistically significant improvement in the condition of the eyelids. MIBO treatment created an instantaneous feeling of comfort and "betterment of condition" in every patient. The manufacturer suggests 2 to 4 sets of treatment using the MIBO. We believe the other parameters tested did not reach statistical significance since the treatment was only performed once. MIBO treatment promises to be a useful adjunctive therapy to Omega 3 supplementation, lid exfoliation, and lid scrubs.