

The efficacy of MiBo Thermoflo in treatment of meibomian gland dysfunction

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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 ThermoFlow (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 the efficacy of 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, lid scrubs and appears as effective as warm compresses in treatment of MGD.

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Clinical Effectiveness of Lid Debridement with BlephEx Treatment

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Purpose: Eyelid disease is a common cause of evaporative dry eye. Lid scrubs and warm compresses done consistently will address this problem but poor compliance makes an office based procedure desirable. Korb found the debridement-scaling of the lower lid margin provides statistically significant symptom relief and improvement in the meibomian gland (MG) function. The Bleph Ex provides a method of accomplishing lid debridement without using a surgical instrument. This study compares signs and symptoms before and after BlephEx treatment.

Methods: Twenty subjects all with MG dysfunction were examined at baseline using a biomicroscope using the Efron scale for grading. Subjects also had a TBUT and OSDI performed. The subjects were then treated with the BlephEx according to manufacturer's directions. 4 weeks later all testing was repeated. Data was analyzed by a t-test with post hoc test for significance.

Results: Subjects TBUT improved from 3.31 \pm 1.3 to 5.47 \pm 4.3 p=0.05. Blepharitis on the Efron scale improved from 1.24 \pm 0.69 to 0.575 \pm 0.54 p=0.01. MG dysfunction also dramatically improved from 1.65 \pm 0.5 to 0.76 \pm 0.59 p=0.01. Symptoms also improved based on the OSDI which went from 43.74 \pm 14.27 to 20.33 \pm 14.35 p=0.01.

Conclusions: This study suggests BlephEx is a viable alternative to lid scrubs and warm compresses. Statistically significant improvement was observed in signs and symptoms of the subjects treated. Eyelid functions improved based on TBUT increase, reduced inflammation and enhanced MG function. Subjects were 50% less symptomatic after treatment. BlephEx appears to be a reasonable clinical approach for use non-compliant MG dysfunction patients.

BlephEx vs Warm Compress - how do they compare?

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Background: Meibomian gland dysfunction (MGD) is a common cause of evaporative dry eye. Lid scrubs and warm compresses may help. However, poor compliance makes an office based procedure desirable. Debridement-scaling of the lower lid margin provides significant symptom relief and improvement in MGD (Korb). The BlephEx is an instrument that spins along the edge of eyelids and lashes, exfoliating the eyelids. This procedure reduces scurf, bacterial debris, and the biofilm.

Methods: Forty subjects, all with MGD were examined at baseline, using a biomicroscope and graded with the Efron scale for blepharitis and MGD. Subjects also had a TBUT and OSDI performed. The subjects were divided into two groups and then treated with the BlephEx according to manufacturer's directions or Warm Compress (WC) twice daily. Four weeks later all testing was repeated. Data was analyzed by an ANOVA with post hoc test for significance.

Results: Baseline data (all subjects included) were: TBUT 3.5 \pm 1.8 seconds; OSDI 42.14 \pm 17.58; Blepharitis on the Efron scale 1.12 \pm 0.51; MGD score (Efron scale) 1.675 \pm 0.818. Warm compresses improved the TBUT to 5.05 \pm 2.24 seconds and reduced OSDI scores (22.486 \pm 13.02), and improved the blepharitis (0.95 \pm 0.73; p < 0.05) and MGD score (1.275 \pm 0.99; p < 0.05). The BlephEx treatment increased the TBUT (5.47 \pm 4.3 seconds; p < 0.05) and improved the OSDI (20.33 \pm 14.35; p < 0.0001), Blepharitis (0.575 \pm 0.54 p < 0.01) and MGD (0.76 \pm 0.59; p

< 0.001) scores. Statistical analysis revealed that the BlephEx data was significantly different compared to baseline in all four measurements as well as significantly better than WC on the Efron scores for blepharitis and MGD. WC data was different from baseline only on OSDI.

Conclusions: The present study suggests the BlephEx performs as well as WC in symptom reduction and exceeds WC in reducing visible signs of eyelid disease. BlephEx appears to be viable treatment option for eyelid disease.