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## **A randomized double-masked study of 0.05% cyclosporine ophthalmic emulsion in the treatment of meibomian gland dysfunction.**

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#### **Abstract**

##### **PURPOSE:**

To compare the efficacy of topical cyclosporine [0.05% cyclosporine A (CsA)] and preservative-free artificial tears in the treatment of meibomian gland dysfunction (MGD).

##### **METHODS:**

A 3-month prospective, randomized, double-masked, parallel-group controlled trial enrolled 70 patients with symptomatic MGD and unstable tear film [tear breakup time (TBUT) <8 seconds]. Patients were randomized to topical CsA (0.05%; group A) and 0.5% carboxymethylcellulose (control; group B) instilled twice daily for 3 months. Ocular Surface Disease Index (OSDI), lid margin inflammation, meibomian gland expression, conjunctival injection, corneal and interpalpebral dye staining, noninvasive tear breakup time (NIBUT) using the Tearscope Plus and invasive fluorescein tear breakup time (FBUT), and Schirmer I test were performed.

##### **RESULTS:**

At the 3-month evaluation, mean OSDI, NIBUT and FBUT, lid margin inflammation, meibomian gland expressibility, and tarsal injection showed significant improvement from baseline in group A ( $P < 0.01$ ,  $P < 0.01$ ,  $P < 0.001$ ,  $P < 0.05$ , and  $P < 0.001$ , respectively). In group B, only the OSDI improved significantly from baseline at 3 months ( $P = 0.003$ ). TBUTs (NIBUT and FBUT) were significantly longer in group A at all visits, and the mean change of TBUTs from baseline was also significantly greater in group A at 3 months ( $P < 0.001$ ).

##### **CONCLUSIONS:**

Topical CsA 0.05% twice daily may be helpful in the treatment of MGD mainly by improving tear film stability.