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Reduced Efficacy of Low-dose Topical Steroids in Dry Eye Disease Associated with Graft-versus-host Disease

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ABSTRACT

Purpose: To compare the response of dry eye disease (DED) to treatment with topical steroid in patients with and without graft-versus-host disease (GVHD).

Design: Post-hoc analysis of a double-masked, randomized clinical trial.

Methods: This single-center study included 42 patients with moderate to severe DED associated with (N=21) or without (N=21) chronic GVHD. In each group, patients received either loteprednol etabonate 0.5% ophthalmic suspension or artificial tears twice daily for 4 weeks. Clinical data, including Ocular Surface Disease Index (OSDI) questionnaire, corneal fluorescein staining (CFS), conjunctival lissamine green staining, tear break-up time (TBUT), and Schirmer's test, were evaluated before and after treatment.

Results: There were no significant differences in signs and symptoms of DED between the groups at baseline. In non-GVHD patients receiving loteprednol treatment, the average OSDI score decreased by 34% from 49.5 ± 5.9 to 32.6 ± 4.8 (Mean±SEM, P=0.001) and the average CFS score decreased by 41% from 5.6 ± 0.6 to 3.3 ± 0.9 (P=0.02). On the other hand, loteprednol treatment in GVHD patients resulted in minimal change in OSDI (59.2±6.7 to 61.1±7.1, 3% increase, P=0.66) and CFS (5.5±0.5 to 5.3±1.1, 4% decrease, P=0.85) scores. Treatment with artificial tears resulted in 22% decrease of OSDI (P=0.10) and 32% decrease of CFS (P=0.02) scores in non-GVHD patients, and had minimal effect in patients with GVHD.

Conclusions: DED patient with ocular GVHD have a less favorable response to a low-dose topical steroid regimen compared with those without ocular GVHD even with similar baseline disease severity.