



SKIN HYDRATION: EX-VIVO COMPARISON OF TWO EMOLLIENTS, ADEX GEL AND ZEROBASE EMOLLIENT CREAM

M. D. ANTONIJEVIC and O. NOVAC

School of Science, Faculty of Engineering and Science, University of Greenwich, Chatham Maritime, ME4 4TB, UK

Introduction

Emollient therapy is the mainstay for treating dry skin conditions such as atopic eczema and psoriasis. Healthcare professionals recommend emollient products based primarily on patient preference and cost. However, they also need comparative effectiveness data in order to make appropriate clinical decisions. The aim of this study was therefore to compare the skin hydration effect of an emollient formulation, Adex Gel, with a widely prescribed preparation, Zerobase Emollient Cream.

Materials and Methods

In this Investigator-blinded and randomised study, skin hydration was compared over a 24 h period following single applications of the two emollient formulations. Three test sites measuring 5 cm x 5 cm were marked on six *ex vivo* skin samples obtained from six human donors. Measurements of skin hydration were performed using the MPA 6 with Corneometer CM 825 probe (Courage-Khazaka electronic GmbH, Germany). After equilibration at room temperature for 2 hours, six baseline (pre emollient treatment) corneometry measurements were performed at each test site. Approximately 0.05 ml of each emollient was applied and gently spread across the respective test sites on each skin sample, leaving the third test sites untreated (Control). Measurements were repeated six times at each test site, 1, 4, 8 and 24 h later.

Area Under the Curve (AUC) for the change from baseline hydration was calculated for each treatment using the Trapezoidal rule. All statistical testing performed is 2-sided using 5% significance level.

Results

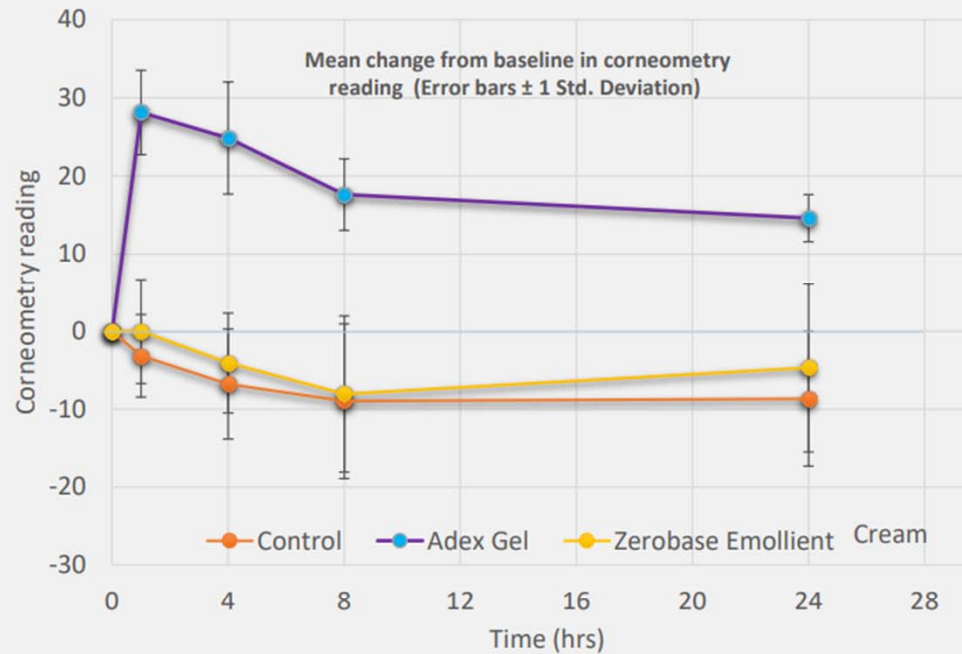


Table 1: Mean Area Under the Curve for Corneometry Readings (0 to 24 hours)

Treatment	Mean AUC	lower CL*	upper CL*
Control	-189	-296	-83
Adex Gel	436	330	543
Zerobase Emollient Cream	-132	-239	-26

*Lower and upper confidence limits at 95% level for mean AUC

Discussion

Baseline mean skin hydration levels were very similar between all sites. Analysis of variance conducted on the AUC data showed a highly significant treatment effect. The mean AUC for Adex Gel was greater than that for Zerobase Emollient Cream (436 versus -132), and this difference was highly statistically significant ($p < 0.0001$). Adex Gel also significantly increased hydration compared to the Control area ($p < 0.0001$). Zerobase Emollient Cream showed very little evidence of any improvement in skin hydration in comparison to Control sites ($p = 0.4186$).

Conclusion

These results suggest that Adex Gel provides significant improvement in skin hydration, whilst Zerobase Emollient Cream achieved no such measurable effect.