CLINICAL EFFICACY OF LINKSKIN® SPRAY IN CANINE ATOPIC DERMATITIS: A PRELIMINARY OPEN-LABEL STUDY

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Introduction

Atopic dermatitis (AD) is a chronic, inflammatory, and pruritic skin disease affecting 10-20% of the canine population. Immunological, structural, and microbiological abnormalities are present in the skin of atopic dogs. Many treatment options, targeting the cutaneous inflammation or pruritus, are available. However, they can be expensive or have topical and/or systemic side effects. The use of new topical products containing natural ingredients with virtually no side effects has dramatically increase in the past decade.

Objective

The goal of the present study was to evaluate the effects of Linkskin® (DNR, Italy), a spray solution containing tyndallized *Lactobacillus rhamnosus* and *Lactobacillus reuteri*, on the clinical signs of canine AD.

Materials and Methods

Privately owned mildly affected non-seasonal atopic dogs were enrolled. The diagnosis of AD was performed based on recent guidelines. A minimum withdraw time of one week for topical antimicrobials, four weeks for systemic antibiotics, non-deposit glucocorticoids, and calcineurin inhibitors was required. The spray was applied to glabrous areas (axillae, inguinal area, ventral thorax, medial thighs) of each dog every 24 hours for 28 days. Topical products including shampoos were not allowed for the duration of the study. Dogs were evaluated clinically using the canine atopic dermatitis extend and severity index (CADESI-04) on day 0, 14, and 28. The data were first tested for normality using the Kolmogorov-Smirnov test (alpha = 0.05). Then repeated measures ANOVA, followed by the Dunnett's multiple comparison test, was performed to evaluate the behavior of each variable over time. A p value of <0.05 was considered statistically significant. All statistical analyses were performed using GraphPad Prism 6.09 statistical software.
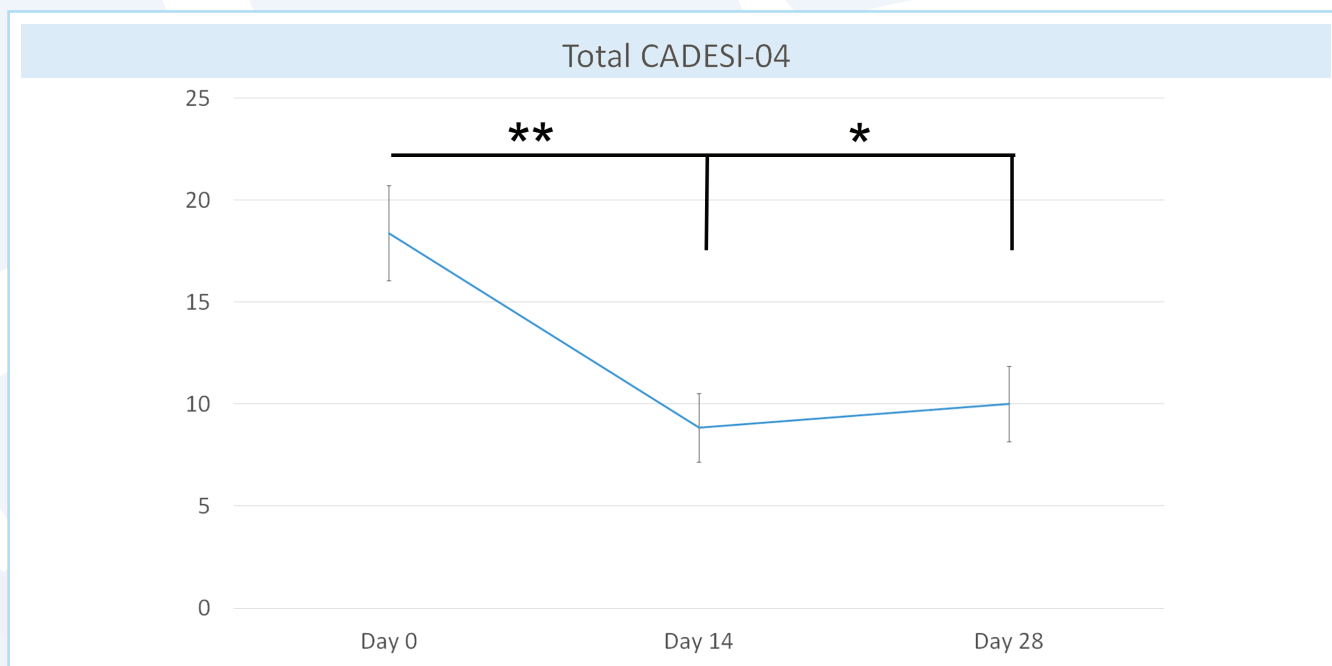

Figure 1: Total CADESI-04 score. Data were analyzed via repeated measurements ANOVA with Dunnetts' multiple comparison tests (*P ≤ 0.05, **P ≤ 0.01). Bars: Standard error of the mean.

Results

A total of six dogs were enrolled in this preliminary study. The mean age (± standard deviation) was 4.9±2.7 years. The mean weight was 33.7±27.3 kg. Breeds included grand Dane (2), mixed breeds (2), pit bull terrier (2), and German shepherd (1).

Clinically, compared to day 0, a significant reduction in the CADESI-04 score, total (Figure 1) and of the treated areas – ventral (Figure 2), was seen on day 14 (p=0.010 and 0.039, respectively) and 28 (p=0.031 and p=0.048, respectively). A CADESI-04-N (≤10) was achieved in 50% and 67% of dogs after 14 and 28 days, respectively.

The product was deemed very easy to use and effective by the owners and no side effects were recorded.

Conclusions

Linkskin® spray showed a significant and rapid decrease in the clinical signs of AD in all enrolled dogs. Owner compliance was excellent due to easy application of the product. A double-blinded placebo control study is currently ongoing to evaluate the clinical efficacy and microbiome changes on canine AD.
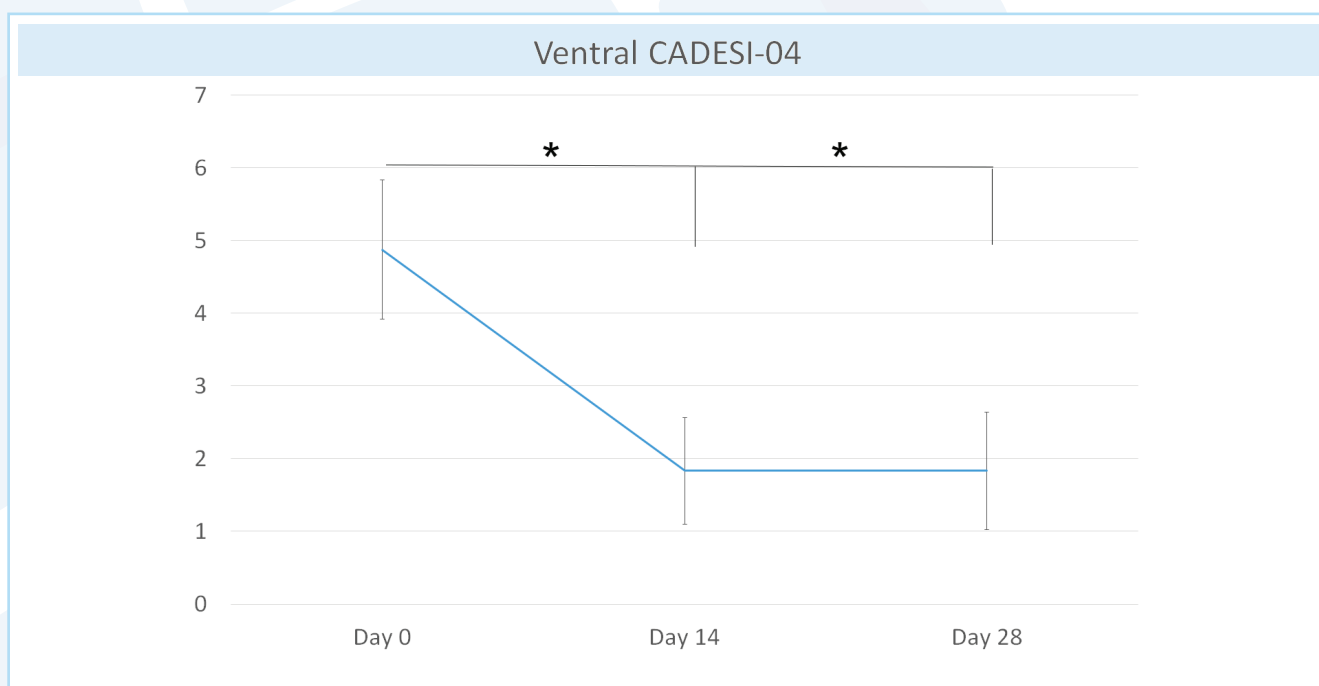

*Figure 2: Ventral CADESI-04 score. Data were analyzed via repeated measurements ANOVA with Dunnetts' multiple comparison tests (*P ≤ 0.05). Bars: Standard error of the mean.*