

EFFICACY OF AN AMMONIUM LACTATE-PIROCTONE OLAMINE SHAMPOO FOR THE MANAGEMENT OF DRY SCALY SEBORRHEIC DISORDERS IN DOGS

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BACKGROUND

The α -hydroxy acid ammonium lactate proved effective in humans for the treatment of xerosis and other hyperkeratotic conditions. Ammonium lactate stimulates the living epidermis, correcting defects in keratinocyte growth, maturation and differentiation (restoration of normal epidermal turnover), and also has marked hydrating properties.

Piroctone olamine is an hydroxy-pyridone compound currently used in the human field to cure *Malassezia*-related skin disorders. Broad *in vitro* activity against major veterinary pathogens was demonstrated, including yeasts, dermatophytes, and staphylococci.

MATERIALS & METHODS

Study format: open clinical field trial.

Animals:

- 16 dogs, 9 females / 7 males, age: 2-12 years, size: 2-40 kg, various breeds: shepherds, terriers, Chow-Chow, Shar-Pei, bulldog, Maltese, Pomeranian, Schnauzer.
- Inclusion criteria: seborrhea and skin dryness.
- Exclusion criteria: associated pyoderma (superficial or deep), severe concomitant otitis, parasitic dermatitis, uncontrolled flea allergy dermatitis, requirement for systemic treatment, treatment with systemic or topical antifungal, antibiotic or anti-inflammatory agents in the week prior to inclusion. Treatment with depot corticosteroids less than 3 weeks prior to inclusion.

Treatment:

- Sebomild P® shampoo therapy: at 3 day-intervals for 3 weeks.**
- Massage all over the body, rinsing off, second massage with a contact time of 10 minutes, final long and thorough rinsing to eliminate foam.

Concurrent medications:

- No other topical agents for dermatological purposes.
- Levothyroxine for hypothyroidism (1 case).
- 5-day course of oral prednisolone (1 case) or chlorpheniramine (1 case) to alleviate significant pruritus at inclusion.

Evaluation:

- Clinical examination before (Day 1) and after treatment (Day 21).
- Seborrhea-related parameters: scaling, skin dryness, malodor and hair coat condition each graded on a 5-point severity scale to calculate an aggregate seborrhea index.
- Inflammation-related parameters: pruritus, erythema and excoriations each graded on a 5-point severity scale.
- Percentage of diseased surface: 0, 10, 25, 50% breakpoints.
- Microbial counts: recorded by cytology (scotch test technique, high power immersion field, x1000) from selected skin sites (neck, ventral abdomen, axillae, paws). Yeast and coccoid populations graded on a semi-quantitative scale. Table 1.
- Owner satisfaction on treatment outcome.

Table 1. Semi-quantitative scale for microbial populations

Mean <i>Malassezia</i> / hpf	Score	Mean cocci / hpf
< 1	0	0 - 1
1 - 3	1	1.1 - 5
4 - 5	2	5.1 - 20
6 - 10	3	20.1 - 40
> 10	4	> 40

hpf = high power field (x1000, oil immersion)

Table 2. Microbial scores on Day 21

No. (%) of dogs	<i>Malassezia</i> score	Cocci score	Interpretation
8/16 (50%)	0	0	None or very few bacteria/yeast
2/16 (12.5%)	1	0	Low numbers of <i>Malassezia</i>
6/16 (37.5%)	1	1	Low numbers of <i>Malassezia</i> and cocci

CONCLUSIONS

Sebomild P® shampoo proved effective *in vivo* to reduce clinical signs and control microbial proliferation associated with dry, scaly keratoseborrheic disorders in dogs.

The rationale for such efficacy resides in the **keratoplastic and moisturizing effect of ammonium lactate, conjugated with the antimicrobial potency of piroctone olamine.**

OBJECTIVES

Evaluate the efficacy of Sebomild P® shampoo (Virbac), containing ammonium lactate 10% and piroctone olamine 0.5%, to control clinical signs and microbial proliferation in dogs with keratoseborrheic disorders of dry, scaly tendency.

RESULTS

- Severity of clinical findings at baseline: moderate to severe scaling and pruritus (15 dogs/16), moderate to severe skin dryness, odor and hair coat alteration (13/16), marked excoriations and erythema (8/16).
- Microbial overgrowth at baseline: ≥ 4 *Malassezia*/hpf and/or >5 cocci/hpf (13 dogs/16).
- The aggregate seborrhea index decreased significantly** over the study period (paired T-test, $P < 0.0001$, NCSS 2004 statistical software). Median reduction of seborrhea was 75% (95% confidence interval: 42.9%-100%) following Sebomild P® shampoo therapy. Figure 1.
- All component seborrhea- and inflammation-related scores decreased significantly (Wilcoxon signed-rank tests, $P < 0.01$) between Day 1 and 21. The average percentage improvement of clinical scores was above 70%, except for hair coat condition (60.4%) and erythema (67.2%). Figure 2.
- In 6/16 dogs, all lesions had resolved at end-point. In another 9/16 dogs the few persistent focal lesions covered less than 10% of the body surface. The percentage of diseased skin surface was estimated between 10 and 25% in the remaining dog.
- Significant reduction of both the *Malassezia* and coccoid populations** were recorded at cytology over the study period (Wilcoxon signed-rank tests, $P < 0.003$).
- None of the dogs presented with microbial overgrowth on Day 21. Table 2.
- No adverse event was reported.
- All owners were satisfied to very satisfied by the treatment outcome.

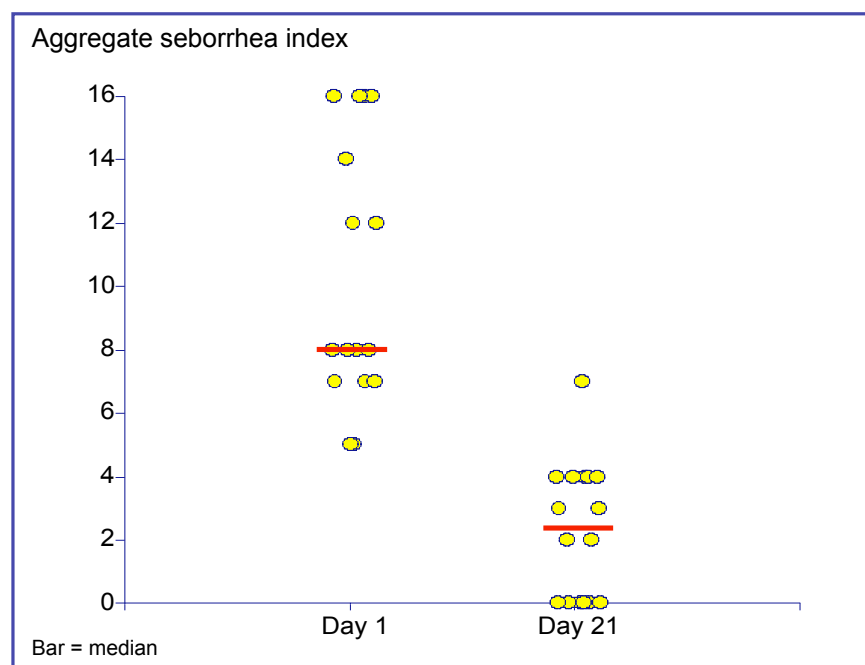


Figure 1. Aggregate seborrhea index: individual values

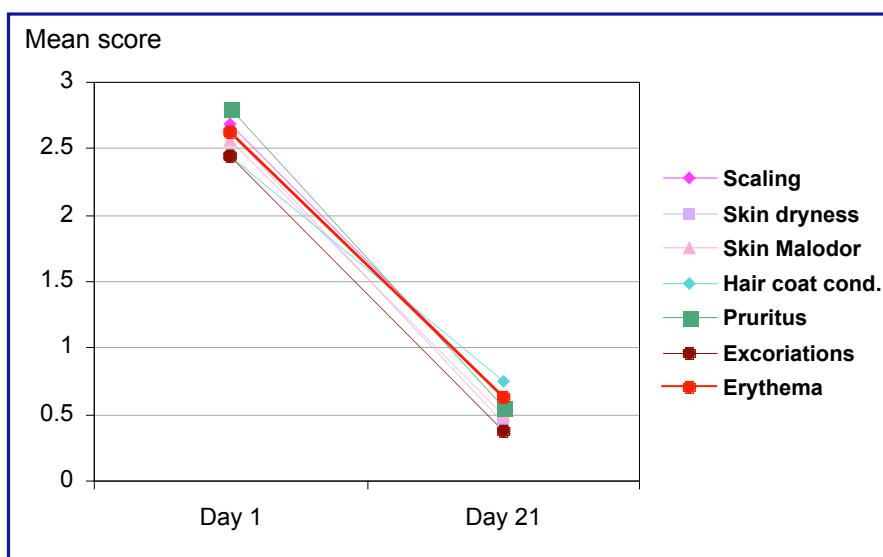


Figure 2. Mean clinical scores

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