



Highly Efficient Rinse-Off/Leave-On Scalp Care Treatments to Reduce Moderate to Severe Dandruff

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ABSTRACT

Background/Aim: Dandruff is a common scalp problem associated with flaky and inflamed skin. In this study, we investigated the efficacy of a shampoo containing piroctone olamine and climbazole and the combination of this shampoo with a scalp tonic containing piroctone olamine and licochalcone A, derived from *Glycyrrhiza inflata* root extract, to reduce dandruff. **Study Design/Methods:** After conditioning, 102 subjects (♂ 56 and 46 ♀) with moderate to very strong dandruff affection underwent a randomized half head study for 4 weeks. The volunteers' heads were washed regularly either with a placebo or the anti-dandruff shampoo, followed by the anti-dandruff tonic application or no treatment. In a 2-week post-treatment phase, subjects only applied placebo shampoo. Every two weeks, trained experts assessed dandruff affection based on a scale of 1 to 6. At study start and after every 2 weeks, cytokine concentrations and anti-fungal activity of test products were determined in scalp wash-ups by enzyme-linked immunosorbant assays or a *Malassezia* colony-forming assay, respectively. **Results:** Results of expert grading and anti-fungal activity revealed a significant reduction in dandruff affection and *Malassezia* colony-forming units after treatment with the anti-dandruff shampoo or its combination with the tonic. Dandruff affection even remained reduced in the post-treatment phase when levels of *Malassezia* colony-forming units had returned to baseline. Cytokine analyses proved a significant decrease in pro-inflammatory dandruff markers after treatment with both anti-dandruff products. For the shampoo/tonic combination, a superior reduction of one scalp inflammatory marker was determined even after the post-treatment phase. **Conclusion:** Both the rinse-off shampoo as well as its combination with the leave-on tonic excellently alleviated dandruff and its associated micro-inflammation. Both treatments showed anti-fungal activity. The superior benefit, exerted by the combination, is primarily based on the known anti-inflammatory effect of licochalcone A and the improved scalp substantivity of the leave-on application.

KEYWORDS

Dandruff; Rinse-Off Shampoo; Leave-On Tonic; Anti-Mycotics; Licochalcone A

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