SEBORRHEIC DERMATITIS OF THE SCALP: results of a clinical study comparing a shampoo with ciclopiroxolamine 1.5% and zinc pyrithione 1% to a ketoconazole 2% shampoo and to a placebo

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INTRODUCTION
Thanks to several recent studies demonstrating the efficacy of antifungals in the treatment of the Seborrheic Dermatitis (SD) we know that the yeasts of genus Malassezia are strongly involved in the onset and the persistence of this dermatosis. With the revision of the genus Malassezia into 7 species in 1996, the research discovered that in SD, M. restricta and M. globosa were the most commonly related (1,2). A preliminary in vitro study comparing the efficacy of 1.5% Ciclopiroxolamine (CPO) and 1% Zinc Pyrithione (ZnP) combination with 2% Ketoconazole on these two species of Malassezia showed a synergistic inhibitory effect of the combination, higher than Ketoconazole (3).

OBJECTIVES
The aim of this phase III clinical study was to evaluate the efficacy of a 28 days treatment with 1.5% CPO/ 1% ZnP shampoo compared to a 2% Ketoconazole foaming gel and to a Placebo in a larger population of patients with moderate to severe scalp SD.

PATIENTS AND METHODS
A multicentric, controlled, single-blind clinical study was conducted on patients with a lesional score ≥ 36 of SD of the scalp. Subjects, randomised in 3 parallel groups, applied one of the above shampoos twice a week for 28 days:
- 1.5% CPO/ 1% ZnP shampoo
- 2% Ketoconazole foaming gel
- 1.5% CPO/ 1% ZnP shampoo washing base

RESULTS
A total of 189 subjects were included.

COMPARABILITY OF THE GROUPS AT BASELINE
A variance analysis completed by Cochran-Mantel-Haenszel test was used to compare the 3 treatment groups. No statistically significant difference except on sex was found, showing comparability of the groups.

LESIONAL SCORE
LESIONAL SCORE EVOLUTION
At each visit, the 2 antifungal treatments have the same significative reduction effect on the lesional score without any significant difference between the 2 groups. Compared to the washing base, the decrease of the lesional score was more important with the 2 antifungal shampoos with a slight difference at D7 (-56% and -59% versus -47%) which became highly significant at D14 (-76% and -78% versus -54%). In contrast, no significant difference was observed between the 3 groups at D28.

The 3 shampoos significantly reduced Erythema at each postbaseline visit. Comparison between groups revealed that the 2 antifungal shampoos induce the same improvement at D7 and D14 with a significant better result than the washing base. At D28, whereas a slight advantage for the CPO/ZnP shampoo was observed, no statistically significant difference was revealed between the 3 groups.

The pruritus was sharply improved from D7 by the 3 treatments all over the study. A significantly more important decrease of the pruritus was observed at D7 with the CPO/ZnP shampoo compared to the other groups. At D14, Ketoconazole foaming gel was as effective as CPO/ZnP shampoo both being more efficient than the washing base, whereas at D28, the 3 treatments had the same effect.

CONCLUSION
The 1.5% CPO/1% ZnP shampoo demonstrated a rapid and significant efficacy on patients with SD, equivalent to the referent product, 2% Ketoconazole foaming gel. We can suggest that the two treating shampoos have a fast action consecutive to their fungicidal properties. Once that the proliferation of yeasts was limited, the efficiency of the 3 products became comparable. The speed of action would be a factor of satisfaction and of improvement of quality of life.

In a healthy scalp, the epidermal cell renewal (resulting in desquamation) is a normal, invisible process. When a dandruff condition is present, this cell renewal is accelerated with excessive and visible desquamation that is commonly accompanied by itching to some degree.

It is a chronic condition that might be triggered by stress, pollution, unsuitable hair products, as well as seasonal, dietary or therapeutic factors. It is not contagious or serious, but can be embarrassing and sometimes difficult to treat.

Dandruff conditions take on various clinical appearances according to the level of seborrhea and the presence of other clinical signs (redness, itching):

- **Oily dandruff:** Seborrheic Dermatitis
- **Dry dandruff:** Psoriasis

### MAIN CAUSES OF DANDRUFF:

- **Hyperseborrhea proliferation:**
  Excessive sebum production promotes Malassezia proliferation (since sebum creates an ideal nourishing environment).

- **Malassezia proliferation:**
  Malassezia yeasts proliferate causing imbalance in the scalp and stimulating epidermal cell renewal. This excessive proliferation induces inflammation of the scalp.

- **Accelerated epidermal renewal:**
  Excessive desquamation (7 to 10 days instead of 21 to 28 days).

- **Inflammation:**
  Malassezia yeasts trigger an inflammatory reaction which leads to itching.

### SCALP PRONE TO SEBORRHEIC DERMATITIS

- Chronic inflammatory disease marked by flare-ups
- Affects between 3 to 5% of the population
- Characterized by oily, yellowish, loose flakes on often irritated and itchy scalp
- Appears on scalp and other areas rich in oil glands, such as eyebrows, sides of a nose and backs of ears, your breastbone (sternum), groin area, and armpits
- Recurring condition, but can be effectively managed with proper treatment

### RECOMMENDED TREATMENTS

- **Relaxation**
- **Healthy lifestyle**
- **Treatment products with targeted ingredients**

### TARGETED INGREDIENTS TO LOOK FOR:

<table>
<thead>
<tr>
<th>MICRONIZED SULFUR</th>
<th>ZINC PYRITHIONE</th>
<th>PIROCTONE OLAMINE</th>
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<tbody>
<tr>
<td>• Exfoliating</td>
<td>• Kerato reducer (improves appearance of squamous conditions of scalp)</td>
<td>• Helps promote healthy scalp environment</td>
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<tr>
<td>• Anti-fungal, anti-bacterial</td>
<td>• Anti-bacterial</td>
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<tr>
<th>SALICYLIC ACID</th>
<th>B-GLYCERYRRETINIC ACID</th>
<th>ZINC GLYCINATE</th>
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<tbody>
<tr>
<td>• Exfoliating</td>
<td>• Anti-inflammatory</td>
<td>• Soothes sensitive scalp</td>
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<tr>
<th>ICHTHYOL</th>
<th>KELUAMID</th>
<th>GLYCINE</th>
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<tr>
<td>• Calms and soothes scaly, irritated scalp</td>
<td>• Removes flaky build-ups</td>
<td>• Calms itching</td>
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<tr>
<td>• Anti-fungal, anti-bacterial, and anti-inflammatory</td>
<td>• Calms itching and soothes irritation</td>
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<thead>
<tr>
<th>CICLOPIROX OLAMINE</th>
<th>GLYCERIN &amp; VITAMIN B5 (PANTHENOL)</th>
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<tbody>
<tr>
<td>• Improves appearance of squamous conditions of scalp</td>
<td>• Nourishes and hydrates scalp and hair</td>
</tr>
</tbody>
</table>

• Anti-fungal, anti-inflammatory