

# Topical Therapy of Skin Scabs in Psoriasis with Salicylic Acid: Case Report

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**Received Date:** 22 November 2021 | **Accepted Date:** 29 December 2021 | **Published Date:** 06 January 2022

**Citation:** Wilfredo M Wills; V Rodriguez. (2022). Topical Therapy of Skin Scabs in Psoriasis with Salicylic Acid: Case Report. International Journal of Clinical Case Reports and Reviews. 10(2); DOI: [10.31579/2690-4861/193](https://doi.org/10.31579/2690-4861/193)

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## Abstract

The objective was to evaluate the keratolytic and anti-inflammatory action of salicylic acid in the affected area in the case reported.

**Methods:** Clinical photography, A digital camera was used Olympus SP570UZ with master software 2.0. The images obtained both in the initial phase without treatment and at the 72 hours of treatment were transferred and stored on a 4-core Samsung computer. The auto-dial adjustment option was selected. In this way, the camera selects the optimal way to take the photo shot. Analysis of the affected skin with scales and scabs. Image J software was used to measure the area selected for the study in both cases. This measurement was made in pixels for the photographic region under study.

**Results:** The image j software program measures the areas in pixels, to decrease in measurement error there was no calibration. That is, the measurement of the areas in pixels was maintained. The percentage ratios of the affected or non-affected areas for both left and right legs are presented in Tables. It is possible to observe the reduction of the affected area. The doubtful areas represent for the left leg 5.21% and for the right leg 30.08% after treatment. Only a clearly visible area with crusts and scabs of 1.60% was observed after treatment.

**Key words:** psoriasis; skin scales and scabs; salicylic acid; topical treatment of psoriasis

## Introduction

Chronic plaque psoriasis is the most common type. Usually these plaques are erythematous. They can be observed on the trunk, buttocks, and limbs and anywhere on the body [1]. They have also been associated with seborrheic dermatitis on the scalp [2] and commonly these lesions are associated with itching and a feeling of dry skin.

Commonly these lesions are associated with itching and a feeling of dry skin. In topical therapy, the use of corticosteroids [3], vitamin D3 20, phototherapy [4], and biological therapy [5] have been considered.

Have been mentioned, that when using multiple topical agents, it is important to be aware of possible compatibility issues, for example, salicylic acid inactivates calcipotriene [6]. Salicylic acid leads to desquamation of corneocytes through two pathways. It reduces intercellular cohesiveness of the horny cells by dissolving the intercellular cement material [7]. In the therapy of psoriasis, Salicylic acid significantly increases the penetration rate of the others topical substances because of its keratolytic effects [8]. The objective of this case report was to evaluate the action of salicylic acid on the scales and scabs of an affected area in a patient with psoriasis.

## Methods

In this study, one case with psoriasis of the skin was reported.

### Study of the affected area

The scalp area of the frontal region was selected in both cases. Aspects such as the presence of scabs and hyperkeratosis were evaluated before and after treatment.

### Clinical photography

A digital camera was used Olympus SP570UZ with master software 2.0. The images obtained both in the initial phase without treatment and at the 72 hours of treatment were transferred and stored on a 4-core Samsung computer. The auto-dial adjustment option was selected. In this way, the camera selects the optimal way to take the photo shot.

### Focus and exposure position

Horizontal and vertical focus orientations as well as exposure were maintained during initial and post-treatment. The sequential firing speed was fast at 13.5 frames per second.

## Inclusion criteria

Only areas where scabs were clearly visible both before and after treatment were accepted to be measured and subsequently compared. All very small or confusing areas were discarded.

## Evaluated area

The area evaluated was from the lower, lateral and internal edge of the knee patella to the area of the proximal phalanx of the feet.

## Statistical procedure

In both legs, the areas with scabs were measured. For both the left and right legs, the affected areas were added before the treatment. The percentages of these areas were then compared with the areas where scabs persist after treatment.

## Analysis of the affected skin with scabs

Image J software was used to measure the area selected for the study in both cases. This measurement was made in pixels for the photographic region under study. This method allowed us to analyze the amount of area affected and compare it before and after treatment by evaluating tissue changes if there are any during the application of the formula containing in its salicylic acid composition. In this way it was possible to quantify the amount of area where the inflammatory process, erythematic, or scab formation persists. Physicochemical and microbiological analysis of the formula. Before its application, the shampoo formula was subjected to a micro biological and physicochemical study carried out by Cima laboratory in Venezuela. The pre-use physicochemical analysis in treated cases was dimensional, pH 6.3 being the established regulations, and values of 3-10. The previous microbiological analysis was: UFC/ml escherichia coli units absent, pseudomona aeruginosa 0, fungus <1, yeasts <1, and staphylococcus aureus absent. These previous results allow framing the product within the established standards and values.

## Case 1

Male patient of 55 years old, weighing 74 kilograms and a height of 1.80 meters. The patient reports itching, dryness of the skin and a feeling of tightness in both legs. Clinically it was possible to observe the presence of scabs and scaly hyperkeratosis disseminated by both legs. Dermatological diagnosis confirmed the presence of psoriasis. Figure 1. The chronology of psoriasis is from adolescence. The patient reports that he frequently suffers from sadness and depression. In the same way, it states that when the stages of depression are accentuated, the presence of plaques also increases.



## Results

The image j software program measures the areas in pixels, to decrease in measurement error there was no calibration. That is, the measurement of the areas in pixels was maintained. The percentage ratios of the affected or non-affected areas for both left and right legs are presented in Tables 1 and 2.

**Table 1**

Left leg	Areas	Percentages
Total area	88955	100%
Affected area	78327	88,05%
Affected area after treatment	5997	6,74%

In Table 1, it is possible to observe the reduction of the affected area. The doubtful areas represent for the left leg 5.21% and for the right leg 30.08% after treatment.

**Table 2**

Right leg	Areas	Percentages
Total area	99487	100%
Affected area	63999	64,32%
Affected area after treatment	1597	1,60%

Only a clearly visible area with crusts and scabs of 1.60% was observed after treatment.

## Discussion

In the reported case, the rapid scaly process of psoriasis scales in the affected areas was clearly visible. The effect of salicylic acid in shampoo form appears to contribute efficiently to the removal of scales and hyperkeratosis of psoriasis. There is a vast array of vehicles including creams, gels, solutions, foams, sprays, shampoos, and lotions. Different vehicles are indicated for different body sites. Scalp is commonly involved in psoriasis and requires gel, solutions, or foams that are not as messy as ointments and creams. Has been reported that Topical agents can be used intermittently or continuously. Agents that are more potent

must be used on a short-term basis to allow for response, and then patients should be instructed to use these agents intermittently for long-term management. This strategy may reduce the risk of side effects [9].

## Conclusion

Topical salicylic acid therapy in the form of shampoo is a safe and tolerable way to remove skin scales in patients with psoriasis.

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DOI: [10.31579/2690-4861/193](https://doi.org/10.31579/2690-4861/193)

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