Evaluation of the degree of skin dryness and the effect of moisturizing therapy in scalp psoriasis

Joo Ha Kim, M.D.1, Jiehyun Jeon, PhD.2, Hae Jun Song, PhD.2
Department of Dermatology, Cheong Ju Medical Center, Cheongju, Korea
Department of Dermatology, Korea University College of Medicine, Seoul, Korea2

Background

• Most of patients showed scalp involvement and it is one of the most challenging conditions in psoriasis.
• Dryness of skin is well known aggravating factor of psoriasis.

Objective

• To investigate the degree of skin dryness and the effect of emollients in scalp psoriasis for arousing the necessity of moisturizing therapy.

Materials and Methods

• Study design
  - Case-control study
  - Approved by the institutional review board of the Korea University Guro Hospital
  - Patient population
    - 15 scalp psoriasis patients and 15 persons in control group
  - Exclusion criteria:
    - Patients who had recent surgical treatment of scalp, other dermatologic disease that might affect scalp psoriasis, photosensitivity, etc.

Evaluation of degree of skin dryness and effects of emollients

Parameter: Capacitance, sebum content, and trans-epidermal water loss (TEWL)

• Measuring site
  - 1) Scalp psoriasis group: Lesional and normal-looking scalp of the body
  - 2) Control group: normal scalp of the body

• Measuring time:
  - Before and after two weeks of moisturizing therapy

Assessment: Electronic measurement by corneometer, sebumeter, and evaporimeter

Application of emollients: Suitable amount, twice daily (day and night) during two weeks

Statistical analysis

SPSS® version 20

Results

I. Scalp vs extremity (or trunk) lesion of psoriatic patients

• Comparing with normal scalp, scalp psoriasis showed lower capacitance (50%), decreased sebum level (66%), and increased TEWL (20%) vs scalp skin of control group

II. Lesional scalp skin of patients vs scalp skin of control group

• Comparing with normal scalp, scalp psoriasis showed lower capacitance (38%), decreased sebum level (30%), and increased TEWL (25%) vs Scalp skin of control group

III. Lesional vs normal-looking scalp skin of patients

• Lesional scalp skin of psoriatic patients vs scalp extremity (or trunk) skin:
  - Between-group tendency still maintain, but significantly higher TEWL

IV. Normal-looking scalp skin of patients vs scalp skin of control group

• Comparing with normal scalp, uninvolved (normal-looking) scalp skin of psoriatic patients revealed decreased capacitance (72%), decreased sebum level (72%), and increased TEWL (121%) vs Scalp of control group

V. Baseline vs after two weeks course of emollients application

• After 2 weeks of moisturizing therapy, significant improvement (37% increase of capacitance, 34% increase of sebum level, and 15% decrease of TEWL) of impaired hydration status were noticed in lesions of scalp psoriasis patients

Discussion

• Lesional scalp skin of psoriatic patients vs lesional extremity (or trunk) skin:
  - Between-group tendency still maintain, but significantly higher TEWL

• Lesional scalp skin of psoriatic patients vs Scalp skin of control group:
  - Poor hydration status and barrier function in involved psoriatic epidermis compared with the uninvolved skin
  - Sebaceous glands were extremely reduced in scalp psoriasis
  - Scalp skin of psoriasis patients is suffered from dryness that well known aggravating factor of psoriasis

• Normal-looking scalp of psoriatic patients vs Scalp of control group:
  - The normal-appearing skin of psoriatic patients have long been known to manifest subclinical morphologic and biochemical changes, particularly involving lipid biosynthesis

Conclusion

• Psoriatic scalp is far drier than psoriatic skin of the other parts of the body
• Even in uninvolved area, scalp skin of psoriatic patients is suffered from lower degree of hydration
• Complementary moisturizing therapy for whole scalp is mandatory to managing scalp psoriasis
• Moisturizing therapy is mandatory to managing scalp psoriasis and to prevent further aggravation by untoward influence of topical steroid

Selected Reference


Conflicts of Interest

In relation to this presentation, I declare that there are no conflicts of interest.