A CREAM CONTAINING LINOLEIC ACID, 5%DEXPANTHENOL AND CERAMIDE IN THE TREATMENT OF ATOPIC DERMATITIS

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ABSTRACT

Abstract
Introduction:
Nowadays, moisturizers contain non-steroidal anti-inflammatory agents help for treatment of atopic dermatitis (AD). Defensil (black currant seed oil, sunflower oil, and balloon vine), a new anti-inflammatory, obtained from plant extracts remain had a few study for AD.

Objective:
To compare the effectiveness of moisturizer containing 3% Defensil, 5% dexpantenol and ceramide (LDC) with 5% urea cream in treatment of childhood AD.

Methods:
Thirty-eight patients with diagnosis of atopic dermatitis by UK working party’s criteria were recruited in randomized, controlled, double-blinded 4-week study. The patients were received with twice-daily application of LDC cream on one side of the body and 5% urea cream on the opposite side. The clinical severity was assessed by modified scoring of atopic dermatitis (SCORAD). Median time to remission was analyzed by survival analysis.

Results:
Thirty-seven out of 38 patients accomplished the protocol. The clinical modified SCORAD significantly improved from baseline in both groups (p <0.001) after 2 and 4 weeks. Furthermore, LDC group significantly reduced severity of disease better than 5% urea group (P=0.043). The mean difference SCORAD scores were -13.83 (± 1.83) and -13.04 (± 3.22) respectively. Stratum corneum hydration (SCH) was enhanced from baseline in both group (p<0.001) but no statistically significant difference between both groups. Median time to remission had no statistically significant difference (P=0.703).

Conclusion:
The effectiveness of LDC cream is better than 5% urea cream for improving clinical atopic dermatitis. It was suggested that moisturizer containing LDC could be used for the treatment of mild-to-moderate childhood atopic dermatitis.

ATTACHMENTS

form pdf

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LDC cream contains three major active ingredients; linoleic acid, 5% dexpanthenol and ceramide in the cream base which is comprised of butylene glycol, glyceryl stearate, disodium EDTA.

Urea cream consists of 5% urea with the same cream base formula.

SAFETY WARNINGS
We evaluated side effect every 2 weeks.

DISCLAIMER:
This study received a research fund from NBD HEALTHCARE CO., LTD. All products in this research such as Defensil cream, 5% urea cream, cream base and bath lotion provided by NBD HEALTHCARE CO., LTD. However, the author declared that the company had not involved in any step of the study.

BEFORE STARTING
A washing out period of up to 2 weeks was required for the patients who applied the previous moisturizer and topical medication such as topical corticosteroids or calcineurin inhibitors, and 4 weeks for the patients who received systemic corticosteroid or NSAIDs. Itching control by oral antihistamine was allowed to continue during the period of this study.

Recruitment and randomization

1 Patients
The patients, 2 to 18 years of age with diagnosis of atopic dermatitis by using UK working party’s criteria with mild and moderate diseases were included. With regard to severity grading of SCORAD score, 0-25 scores were defined as mild diseases and 26-50 scores as moderate severity. All patients had active atopic dermatitis rash on both side of their body for controlling the quality of the treatment and the split-body study.

2 Wash out period
A washing out period of up to 2 weeks was required for the patients who applied the previous moisturizer and topical medication such as topical corticosteroids or calcineurin inhibitors, and 4 weeks for the patients who received systemic corticosteroid or NSAIDs. Itching control by oral antihistamine was allowed to continue during the period of this study.

3 Exclusion criterion
The patients with active skin infection were also excluded. The patients who have committed use of tropical or systemic corticosteroids, in addition to the loss of follow up for 2 times would be excluded from this study. The SCORAD, skin hydration, and patients’ satisfactions were measured.
Randomization

The randomization sequence was generated by computer. The patients received tropical moisturizer containing linoleic acid, 5% dexpanthenol and ceramide (LDC cream) randomly on one side of their bodies and 5% urea cream on the other side. Allocation sequence was concealed from all participants and investigators by third party.

Materials

All participants were informed and concealed. They received 3 products which are moisturizing wash lotion, cream base to apply at non-atopic area of both sides and the product cream.

The containers were labelled as "left" or "right" to apply on atopic area. Both test creams had the same colour, odor, and texture provided in the same containers that we prevented contamination between both creams by informing the patients and their parents how to apply them.

LDC cream contains three major active ingredients; linoleic acid, 5% dexpanthenol and ceramide in the cream base which is comprised of butylene glycol, glyceryl stearate, disodium EDTA.

Urea cream consist of 5% urea with the same cream base formula.

Methods

We measured baseline SCORAD, Skin hydration was measured with Corneometer CM 825 (Courage & Khazaka Electronic GmbH, cologne, Germany) at day 0.

Take a photo at the begining before all participants apply any products.

All participants were recieved 2 products which the containers were labelled as "left" or "right" to apply on atopic area. We prevented contamination between both creams by informing the patients and their parents how to apply them.

At 2 weeks

We measured clinical outcome of SCOARD, Skin hydration, clinical side effects.

Take a photo at 2nd weeks after use test product both left and right sides.

At 4 weeks

We measured clinical outcome of SCOARD, Skin hydration, clinical side effects and patients’ satisfaction score which was graded from 1 to 5 as poor, no change, fair, good and excellent, respectively.

Take a photo at 4th weeks after use test product both left and right sides.