

Applied Corneotherapy and Skin Care Guidelines for the Anti-Aging Treatment

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Published by *Ästhetische Dermatologie* 2007, 6;3:8-16

Introduction

The author used the theory of corneotherapy to develop a skin treatment method to prevent premature skin aging. Corneotherapy, a term coined by Dr. Albert Kligman, was described as a skin care concept based on repairing the stratum corneum and therefore improving the function of the skin barrier. In this article, the use of applied corneotherapy involved the use of topical products, treatment methods and measures involving skin protection, supportive skin regeneration, individualized treatment of skin problems, typical anti-aging actives, skin diagnosis and a treatment procedure.

Skin Protection

Moisturizers

The use of moisturizers increased the elasticity and smoothness of the skin. The author found that 40% of the natural moisturizing factor (NMF) consisted of amino acids that served two roles. The first role was moisture content and the second role osmotic balance. The author recommended the use of liposomes as carriers for agents that replenish NMF because their membranes contain phosphatidylcholine, which is compatible with the skin.

Derma Membrane Structure

The author suggested that the natural structure of the skin, which is constructed of bilayers of ceramides, cholesterol and palmitic acid, would be more affected by skin care products with a similar composition as they would be more compatible than other structures. One described system that had a similar structure is known by the name derma membrane structure (DMS). DMS contains ceramides, hydrogenated phosphatidylcholine with chemically bound palmitic and stearic acid, and phytosterols, which are similar to cholesterol.

Sun Protection

The use of sun protection from both ultra violet and infrared radiation was important in preventing both premature aging of the skin and stress to the skin. The author discussed the importance of integrating ultra violet filters into a derma membrane structure as mentioned above. The author cautioned that the constant use of skin care products with UV filters should be avoided as extended use can prevent the formation of essential D Vitamins. The possibility of reducing sensitivity to sun radiation by using CM-glucan as an active agent was discussed because of its cell protective and smoothing effects.

Supportive Skin Regeneration

Avoiding Specific Components

A core concept of corneotherapy was that components in skin care products should not affect skin regeneration or cause adverse skin reactions. It was recommended to avoid ingredients such as perfumes, preservatives, mineral oil, non-volatile silicones, and emulsifiers.

Essential Fatty Acids

The importance of essential fatty acids was stressed in the article, particularly linoleic acid, which exists in the skin as ceramide I. Phosphatidylcholine was seen to be highly effective in conditions such as acne and skin barrier disorders, mainly due to its high linoleic acid content. Several active agents with essential fatty acids were described, including evening primrose oil, rose hip oil, grape seed oil, and wheat germ oil.

Carrier for Regeneration Supporting Active Agents

Different active agents required specific carriers to be effectively released into the skin. Carriers such as DMS and phosphatidylcholine-containing non-aqueous oleogels with DMS components gradually released active agents and provided a long term effect. In contrast, liposomes and nanoparticles dispersed active agents relatively quickly into the deeper skin layers. By adding DMS to liposomes and nanoparticles the release rates were influenced depending on the specific concentration.

Vitamins

The most frequently used substances for skin regeneration were vitamins and their esters. The most significant substances included vitamins A, C, and E, yeast extract (B vitamins) and coenzyme Q10. The author noted that 0.5% concentrations of Vitamin C was used in liposomes in order to activate collagen in the skin and inhibit tyrosinase activity.

Physical Measures to Support Skin Regeneration

The author discussed the use of physical techniques for skin regeneration. Examples of methods for stimulating microcirculation included massage, exercise, physiotherapy, and cold water showers.

Individual Treatment of Skin Problems

Individualized treatment, one of the core concepts of corneotherapy, required specific active agents to be used for different skin conditions. The objective was to prevent future skin problems and preserve a healthy skin barrier. Recommended active agents for barrier disorders such as psoriasis, atopic skin and dry skin included phytosterols, fumaric acid, aloe vera extract, and hamamelis extract. Cornification disorders such as acne, inflammation and ichthyosis benefited from actives such as phosphatidylcholine and Vitamin A. Erythema and other irritations such as keratoses and rosacea responded well to actives

such as Vitamin K, boswellia, echinacea extract, D-panthenol, and CM-glucan. All of the above mentioned barrier disorders also benefited from evening primrose and linseed oils.

Typical Anti-Aging Actives

Anti-aging active agents were described as those that may temporarily change the skin condition by creating effects such as smoothing or reduction of wrinkles. Hyaluronic acid and para cress liposomes provided physical effects such as skin-tightening and relaxing muscle contractions. A range of peptides including palmitoyl-lysine-threonine-threonine-lysine-serine and acetyl-glutamic acid-glutamic acid-methionine-glutamic acid-arginine-arginine increased collagen synthesis and reduced wrinkles. Green tea improved microcirculation, grape seed extract liposomes scavenged radicals, and phyto-hormones provided estrogen-like effects. Other physical effects included whitening and pigments that affect the appearance wrinkled through light reflection.

Skin Diagnosis

A Precondition for the Treatment

The importance of precise diagnosis of the skin condition was stressed. Methods of diagnosis included detailed interviewing and modular measuring instruments. It was recommended to collect data such as skin hydration levels, trans-epidermal water loss, lipid content, elasticity, skin redness, and others. Additional information could be found through genetic measurements and hormonal data.

Treatment Procedures

The author closed with a sample treatment procedure for an elderly patient with dry skin, and highlighted that the concept of corneotherapy allowed the skin barrier to be adjusted to either allow the transportation of active agents, or to act as a barrier and provide skin protection. The treatment outlined specific steps such as skin cleansing, peeling, toning, applying active agents, and closing the skin barrier.

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Effect of Myristyl Nicotinate on Retinoic Acid Therapy for Facial Photodamage

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Published in Exp Dermatol 2007, 16;11:927-935

Introduction

The study authors explored retinoids, which act on both the dermis and epidermis and are known to produce smoother, less wrinkled and less pigmented skin. Working in the epidermis, retinoids increase epidermal



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