


Investigating a Novel Treatment for Ichthyosis

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BACKGROUND

The ichthyoses are a heterogeneous group of inherited scaling skin disorders that can also affect other organs. They are rare genetic dermatologic diseases that are characterized by dry, thickened, scaling skin. Ichthyosis affects more than one million Americans and can cause devastating disfiguring disease with numerous physical, social and emotional sequelae. Ichthyosis is the result of a genetic mutation. There is no cure, only treatments to help manage the symptoms. "Ichthy" is taken from the Greek root for "fish" so ichthyosis literally means fish disease, characterizing the scales and plaques formed by the abnormal turnover of the epidermis.

There are an estimated 28 varieties of ichthyosis with four major hereditary types. All variations present with a wide range of severity and associated symptoms. Ichthyosis is currently classified on the basis of clinical presentation and inheritance pattern. X-linked ichthyosis is due to the deficiency of the enzyme, steroid sulfatase. Female carriers are asymptomatic. The incidence has been estimated to occur in 1:60,000 males and is usually apparent soon after birth. Key findings are small, dark, firmly adherent scales; accentuated on the side of the neck and trunk, generally sparing the face, palms, soles and antecubital and popliteal spaces. In X-linked ichthyosis, there seems to be a normal epidermal turnover, and the accumulated scale is thought to be due to faulty shedding of the stratum corneum.

PURPOSE

The purpose of this case study was to investigate an advanced skin care line providing endermic nutrition. The thought is that this Olivamine containing product line will diminish the appearance and symptoms associated with Ichthyosis.

OBJECTIVE

A new advanced skin care line that contains Olivamine®, a Quadrapeptide that combines amino acids, vitamins, antioxidants and methylsulfonylmethane (MSM), water-resistant silicones, and utilizing surfactant-free phospholipids cleansers was introduced. Studies have demonstrated that the use of topical amino acids can cause an inflammatory response, however, there is scientific evidence that laser homogenization of these molecules reduces the inflammatory response while increasing the bioavailability of the amino acid. The amino acids in Olivamine have been treated with this laser. Amino acids require vitamin co-factors to make them "active" or available to the skin. The primary co-factors are vitamins A, C, D₃, B₆ and B₃ (as niacinamide). Vitamin C is essential for the creation of collagen.

METHODOLOGY

The protocol included daily cleansing with the phospholipid based cleanser and then gently pat the skin dry. Once dry, apply the skin repair moisturizing cream, followed by the protectant barrier cream to decrease excessive transepidermal water loss (e-TEWL). For areas of odor, fungal infection, and other high risk areas, an antimicrobial cleaner was used. For the fungal infection, an Olivamine containing antifungal cream with 2% miconazole nitrate was applied.

CASE STUDY

J.M. is a 44 year-old African American male diagnosed at age 10 months. J.M. has a history of hypertension and is status post myocardial infarction, and has intentionally recently lost 70 lbs. For Ichthyosis, he has been treated unsuccessfully with rock salt, scrubbing with a wire brush, motor oil soaks, clear plastic wraps, bleach soaks, topical salicylates, poly hydroxy acid containing lotions as well as oral retinoids. He describes periods of intense itching, raw, bleeding skin, pain and constant irritation. He suffered with frequent episodes of tinea pedis in the interdigital web spaces and reported skin odor, possibly from superficial bioburden. J.M. became depressed and isolated. His chief complaint was, "My Ichthyosis". His goals of treatments were, "To be able to wear shorts and not itch or be in pain anymore!"

OUTCOMES AND RESULTS

During the first week of treatment, the test area began to exfoliate and the patient reported an immediate decrease in itching and discomfort. By week two, partial areas of "normal" appearing skin on the left arm were visible. By week three, the entire test area was clearing. At week four JM reported "People have noticed that my skin is getting better. I feel just great!" I don't itch or have any pain in this area. I feel like a new man!"

He is now wearing short sleeved shirts and shorts and is no longer ashamed of his body, and not be embarrassed of his ichthyosis. The Olivamine containing products have successfully treated his ichthyosis and the symptoms have not returned. The products were cosmetically acceptable to the patient and his family as well.

JM continued using the skin care products, head-to-toe and has had similar success with his entire body. After complete clearing of his thickened sclerotic epidermis, he has continued with one product after cleansing, the nutritional protectant cream containing seven silicones.



Left anterior arm before treatment



Left upper anterior arm before treatment, close up. Note fibers from patient's clothing imbedded in skin scales.



Left anterior arm completely clear and free of scales in treatment area after less than four weeks therapy with the Olivamine containing skin care products.



Left anterior arm close-up shows nearly normal skin after three weeks treatment with the Olivamine containing skin care products.

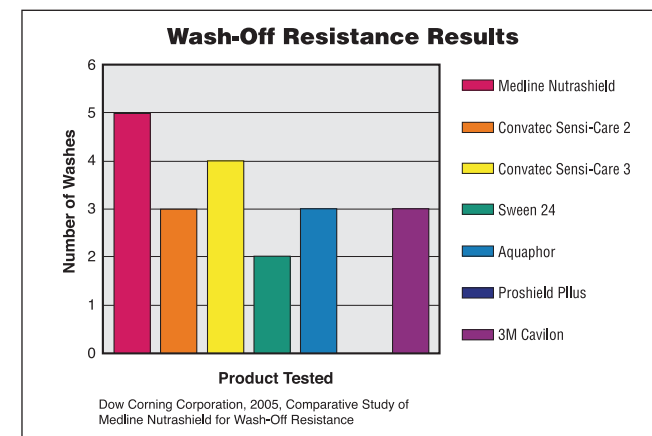
DISCUSSION

This skin care line contains several key ingredients.

- The three most abundant amino acids; glycine, L-cysteine, and L-proline, the building blocks of collagen
- Vitamins A, C, D₃, B₆ and B₃ are present to support the skins ability to utilize amino acids and other nutrients
- Antioxidants, such as Hydroxytyrosol, found in olives and virgin olive oil is by far the most powerful antioxidant available today. L-taurine, another antioxidant is also an important amino acid.
- Methylsulfonylmethane or MSM, is a naturally occurring anti-inflammatory agent that may inhibit or slow pain fiber conduction. These pain fibers lack the protective myelin sheath and are responsible for the pain associated with patients known as "stingers" (low threshold for pain).
- Phospholipid based cleansers that maintain the natural pH of the skin. Historically, surfactants have been used; however, research has demonstrated that surfactants can actually strip the skin's natural protective acid mantle.

Occlusive ingredients such as petrolatum are contained in many of the skin care products utilized for Ichthyosis and other dry skin conditions. Petrolatum blocks the atmospheric oxygen supply to the epidermis normal cellular respiration, traps toxins and moisture, increasing the risk for infection. Since the Olivamine containing products contain no occlusive ingredients, it is hypothesized that the carrier as well as the nutritive qualities could have had a positive effect on this patient.

Ingredients such as the dimethicone and other silicones in the Olivamine containing products help deliver the active ingredients and nutrients in a prolonged time rather than doing so all at once. Silicones act as delivery system for active ingredients because they form hydrophobic films on the skin, which are spreadable and traceable. Silicone may also help the product stay in place for longer periods of time. For example, in a study (Figure 1), the Olivamine containing silicone protectant cream withstood five wash-offs and remained in contact with the skin when compared to other leading brands with ingredients such as petrolatum, dimethicone and zinc oxide.



CONCLUSION

This encouraging case study demonstrates the unique capabilities of a novel skin therapy product line. The reported benefits are:

- cleanse with phospholipids that do not dry or strip the skin
- repair and nourish the skin with endermic nutrition and potent antioxidants such as hydroxytyrosol and MSM proven to decrease the transmission of pain
- provide the most abundant amino acids in pre-collagen, glycine, L-cysteine and L-proline and their vitamin co-factors A, B₃, B₆ and D₃
- protect while decreasing e-TEWL* with a long lasting seven silicone based protectant cream
- safely and comfortably debride the thickened dystrophic skin without irritation
- Prevent the further buildup of thick, hardened scaly skin with aesthetically pleasing products that allow epidermal respiration, normal barrier recovery and epidermal proliferation.

These benefits have had a positive outcome on JM's quality of life. He will continue on the therapy for the rest of his life, utilizing cost-effective, over-the-counter products to continue his good results. Endermic nutrition with products containing Olivamine* may help dermatologic conditions such as Ichthyosis and other serious skin circumstances where there are no known cures or adequate treatments.

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