Omental lipid to Minimize Decubitus Ulcers

Joseph C. DiNardo, MS
Executive Vice President & Chief Scientific Officer
Pharma Cosmetix Research, LLC
Colonial Heights, VA 23834
Address Correspondence, Proofs, and Reprint Requests To:
Joseph C. DiNardo
1701 Touchstone Road
Colonial Heights, VA 23834
Phone804-743-9885
Fax 804-524-8600

Abstract

A clinical evaluation in approximately 200 non-ambulatory patients, between the ages of 50 and 99 with various pathologies, was conducted, whereby products containing omental lipid were used to minimize the occurrence of decubitus ulcers. Applications lasted between 2 and 6 weeks (average of 3.5 weeks) with weekly evaluations for erythema, edema, de-epithelialization, exudate, dyshidrosis, cracking, maceration, pain, burning and itching. 143 subjects (68%) presented unaffected skin and the products with omental lipids were applied for decubitus ulcer prevention, 22 subjects (10%) presented decubitus ulcers, and the remaining 45 subjects (22%) presented local dystrophy. At the end of the trial, 144 subjects presented apparently unaffected skin. Re-epithelialization occurred in 2 of the subjects with ulcers, the remaining subjects showed a marked improvement in the symptoms and signs under observation. The results observed were attributed to the protective action of the lipidic film and to the local trophic stimulation created by the products. It was concluded that the early use of products containing omental lipids, in at risk subjects, can minimized the occurrence of decubitus ulcer formation.

Introduction

Decubitus ulcers have been a problem faced by many patients, both old and young alike, in nursing homes, hospitals, and home care programs when a disease state produces confinement to a bed and/or wheelchair. These ulcerations are produced via tissue compression between bones and external surfaces resulting in a decrease in capillary blood flow to the skin resulting in ischemia. This state causes a progressive degeneration of the tissue and the development of decubitus ulcers. Other factors such as incontinence, irritation caused by external influences such as radiation therapies, age, general health, and the overall condition of the skin can also create an environment in which the risk of ulcer formation is greatly increased.

Omentum has been reported to be an effective healing agent and supplier of blood to ischemic areas for almost a century (1, 2). Various studies have been published demonstrating benefits in coronary revascularization (3, 4), reconstructive surgery (5, 6), radiotherapy damage (7, 8), diabetic foot and varicose/decubitus ulcers (9, 10). These benefits were attributed to the identification of a lipid fraction of the omentum that produced the beneficial effects observed in the various studies (11, 13). This study further reports on the benefits of omental lipids incorporated into a cleanser and a barrier cream in the prevention and treatment of decubitus ulcers.

Methodology

Subject Selection: Approximately 200 male and female patients, between the ages of 50 and 99, were selected for the study. The patients were not ambulatory as a result of various pathologies and presented some form of dystrophic skin conditions and/or were at risk for decubitus ulcers as a result of their confinement.

Therapies for the treatment of the base pathologies were initiated or continued depending upon acceptance into the study and standard precautions made to prevent decubitus ulcer formation were adopted. In addition, skin areas subject to compression were cleansed with an waterless cleanser (did not require water to cleanse or rinse-off) containing omental lipids 2 to 3 times a day followed by application of a moisturizer also containing omental lipids. In subjects where decubitus ulcers had already developed, the omental lipid cream was applied to the surrounding tissue. No other local therapy was used. Applications lasted between 2 and 6 weeks depending upon patient

discharge. Prior to application and at 1 week intervals, all application sites were evaluated on a 0 to 4 Scale (0 = None; 4 = Severe) for erythema, edema, de-epithelialization, exudate, dyshidrosis, cracking, maceration, pain, burning and itching.

Results

A total of 210 patients, 85 men (40%) and 125 women (60%) were used in the study. Average age was 79 (minimum 50, maximum 99), refer to Table 1. The skin surface treated varied from a minimum of 2 cm2 to a maximum of 900 cm2 localized on the sacrum, heels, buttocks, and elbows. Table II indicates the causes of immobility. The application of products containing omental lipids lasted for a minimum of 2 weeks to a maximum of 6 weeks (average of 3.5 weeks).

At the beginning of the trail, 143 subjects (68%) presented unaffected skin and the products with omental lipids were applied for prevention, 22 subjects (10%) presented decubitus ulcers, and the remaining 45 subjects (22%) presented local dystrophy. At the end of the trial, 144 subjects presented apparently unaffected skin. Re-epithelialization occurred in 2 of the subjects with ulcers, while in 1 case a new ulcer developed in a subject who had initially presented signs of skin irritation, the remaining 63 subjects showed a marked improvement in the symptoms and signs under observation which was statistically significant ($p < 0.01$) as shown in figures 1 - 7. There were no signs of local intolerance.

TABLE I: General Demographics

Total Number of Subjects	210
Number of Males	85
Number of Females	125
Average Age	79 yrs
Youngest	50 yrs
Oldest	99 yrs
Average Skin Surface Area Treated	122 cm2
Smallest	2 cm2
Largest	900 cm2

Table II: Causes of Immobility

Disorder	Number	Percent
Chronic Vascular Encephalopathy	40	19
Bone Fractures	30	14
Ictus	30	14
Respiratory Insufficiency	12	6
Other	98	47
Total	210	100

Discussion

Alterations to skin trophism in areas subjected to prolong compression represent a serious problem for bed-ridden and non-ambulatory patients. The etiology of these lesions has a multi factorial genesis, involving situations of local ischemia associated with organic compounds (perspiration, urine, feces). Existing procedures for the prevention or limitation of such manifestations are not always affective and the resulting ulcers can often have irremediable outcomes. In this study the local application of a product containing omental lipids for up to 6 weeks made it possible to prevent the appearance of dystrophic manifestations in subjects with unaffected skin and to reduce, in whole or in part, such manifestations when already present. Similarly, in a study using 15 normal male subjects (ages 51 to 66) monitored for wound healing, after receiving a 4 mm biopsy punch, demonstrated a significant increase, over non-treated controls, in the rate of healing after application of a product containing 25% omental lipids over a 28 day period. The mechanism of which wound healing is accelerated in both this study and in the clinical trials reported may be in part related to omental lipids ability to enhance angiogenic factors leading to a quicker recovery time (11, 12, and 13).

Conclusion

In summary, the overall results observed in this study can be attributed to the protective action of the lipidic film and to the local trophic stimulation created by the products. Additionally, the absence of any intolerance suggest that the early use of products containing omental lipids, in at risk subjects, can minimized the occurrence of decubitus ulcer formation.

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