

18512

**The significance of dermoscopy and trichoscopy in differentiation of erythroderma due to various dermatologic disorders**



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The diagnosis of an underlying cause of erythroderma may be difficult and often pose a challenge for dermatologist. There are only few case reports describing dermoscopic features in erythroderma of various origin. None of the previous studies analyzed trichoscopic patterns in this group of patients. The studied group comprised 19 adult patients with erythroderma (12 female/7 male, overall age range 18-88 y) in whom demographic data, disease course and duration, previous treatment, as well as dermoscopic and trichoscopic features were analyzed. There were 5 patients with the diagnosis of atopic dermatitis (AD), 6 patients with mycosis fungoides (MF), and 3 patients with Sezary syndrome (SS). The others were diagnosed with: allergic eczema (AE; n = 1), dermatomyositis sine myositis (DsM; n = 1), psoriasis (Pso; n = 1), actinic reticuloid (AR; n = 1), and crusted scabies (CS; n = 1). White scale, white-pinkish structureless areas, and combination of dotted, linear irregular, and spermatozoon-like shape vessels were the most common structures observed in MF (each in 100%); brown structureless areas were present in 66.7%. In patients with AD white scale, white-pinkish structureless areas, and dotted vessels were present in 100%; linear irregular vessels were present in 80%. In SS the most common structures were: white scale, dotted vessels, linear irregular vessels (each in 100%); glomerular vessels and gray dots were present in 66.7%. Characteristic dermoscopic/trichoscopic patterns seem to be particularly useful in initial recognition of SS, DsM, CS, and Pso. Trichoscopy provides additional, not previously reported, clues that may be useful in initial clinical differentiation of erythroderma due to various dermatologic disorders.

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18560

**Phytochemical characterization and clinical evaluation of the efficacy of a topical product containing calendula petals and calendula extract**



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Background: *Calendula officinalis* has been used in traditional medicine to help relieve skin inflammatory and irritation. The present studies were performed to 1) analyze the presence of principal constituents known to be found in calendula flowers such as flavonoids and triterpenes, 2) evaluate the clinical efficacy of in reducing methyl nicotinate-induced irritation, and 3) improve early clinical signs of aging on a topical cream containing micronized calendula petals and extract.

Methods: Phytochemical characterization on the calendula petals, extract and topical product containing these ingredients were performed via a combination of gas chromatography/mass spectrometry and liquid chromatography/UV detection methods. Clinical manifestation of erythema was assessed through blinded expert grading on methyl nicotinate treated sites with the topical product. A negative control (methyl nicotinate treated with no topical product applied) and positive control (methyl nicotinate treated with 3% Diclofenac applied) were included. In addition, a 4-week, single center, clinical study through blinded expert assessments on early aging signs was conducted on women aged 20-55 with self-reported skin discomfort.

Results: Among the phytochemicals found, quercetin,  $\alpha$ ,  $\beta$ -amyryn, oleanolic acid and lupeol were the most concentrated components found within the petals, extract and topical product. The sites treated with the topical product showed statistical significant reduction in methyl nicotinate-induced erythema when compared with the untreated control. Statistically significant improvements were observed in fine, dry lines, skin texture, radiance, suppleness, and overall skin healthy look/condition during the 4-week clinical test.

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18553

**Dermatologic foes faced by mixed martial arts fighters**



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Mixed martial arts (MMA) is one of the fastest growing sports worldwide. Dating back to Olympics of ancient Greece, it was originally referred to as pankration (pan and kratos referring to "all powers"). Training for MMA is an arduous process. While countless hours are spent on attaining skills to overcome in-ring challengers, MMA fighters cannot escape a different opponent-skin disorders resulting from the nature of their chosen sport. As a full contact sport, MMA fighters are at risk for a number of cutaneous disorders ranging from trauma to infections and dermatoses due to close contact and environmental causes. Most infections are minor; however, if not cared for appropriately they can lead to serious consequences. The most common cutaneous infections in MMA fighters are herpes simplex virus infections, skin and soft tissue bacterial infections and fungal dermatophyte infections. Methicillin resistant *Staphylococcus aureus* (MRSA) is of great concern as the infection can spread rapidly. Contact dermatitis and other dermatoses are most often acquired from increased exposure to causative agents. Frequent and prolonged contact with irritants such as aldehydes, cleaning agents on mats, dyes, materials within grappling gloves and high-level of washing can induce contact dermatitis. Mechanical injuries such as friction burns, abrasions, and lacerations are also common. Due to the innate nature of the sport, cutaneous disorders will likely continue to plague MMA fighters. However preventative measures including workplace assessments, proper equipment and wound care and early use of appropriate antibiotics should be instituted to mitigate risks and serious consequences.

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18567

**Evaluation of the mildness potential of liquid cleansers**



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Little is known about how personal care products affect the skin barrier and composition of the skin microbiome. Current data suggest that skin microbiome diversity is important in the maintenance of the skin barrier equilibrium. This study explored the effects of 6 cleansers on the skin microbiome, skin physiology, and epidermal barrier. Eighty-nine healthy women used 1 of 6 body washes (pH 4-9) at least once per day for 4 weeks as part of their normal bathing routine, paying particular attention to cleansing of the volar forearm. The volar forearm was assessed for product effects on the microbiome, barrier measures (skin pH, moisture, TEWL [transepidermal water loss]), protease activity, and epidermal lipid composition. Routine use of the low-pH cleansers was well tolerated and did not result in major changes to alpha or beta diversity of the skin microbiome. Compared with the lower-pH cleansers, use of the high-pH cleanser resulted in significantly increased TEWL, the greatest increase in skin pH, significantly increased protease activity (almost doubling in 4 weeks), decreased ceramides, and increased desquamation. However, no significant change in microbial diversity was observed with this cleanser. To our knowledge, this is the first longer-term clinical assessment of multiple cleanser types and their effects on the skin microbiome. These data indicate that properly formulated cleansers can be gentle to the skin barrier and microbiome, while demonstrating the need to conduct longer-term studies with clinical correlations to better understand the impact of personal care products on the skin.

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