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Influence of skin anatomic location on cutaneous homeostasis

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Background: Skin barrier structure is different between body areas, so differences in homeostatic parameters such as transepidermal water loss (TEWL), stratum corneum hydration (SCH), melanin, and erythema are expected. There is scarce evidence regarding normative data for these parameters.

Objective: 1) To evaluate normative data for homeostatic parameters such as skin TEWL, SCH, melanin and erythema in healthy patients. 2) To analyze correlations between these parameters.

Methods: A cross-sectional study was designed with 87 healthy volunteer participants. TEWL, SCH, erythema and melanin index were measured using noninvasive tools (Microcaya SL, Bilbao, Spain). Measurements were taken at three different anatomic locations: cheek, palm of the hand and antecubital fold.

Results: Fifty-three women and 34 men were enrolled in the study. The mean population age was 22.72 years, so participants were classified between 2 age groups: <23 years (n = 62) and ≥23 years (n = 25). Significant differences were observed between measured homeostatic parameters in every different body area ($P < .005$). Moreover, an inverse correlation between SCH and TEWL was detected at the cheek ($r = -0.259$, $P = .015$). TEWL at the cheek and at the antecubital fold was higher in the older group (14.45 vs 16.91, $P = .049$; 9.23 vs 10.81, $P = .022$).

Conclusions: TEWL, SCH, melanin and erythema are highly dependent on skin area. The reported data provides normative data stratified by anatomic location that may be used by clinicians to objectively determine whether patients' skin characteristics vary significantly from healthy subjects.

Commercial disclosure: None identified.

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Oral and skin ulceration in a patient with Alzheimer disease

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Case Description: Case of a 76-year-old woman with history of hypertension, atrial fibrillation, arthritis of unknown origin, and Alzheimer disease who was evaluated for a 2-month history of painful oral mucosa erosions with hemorrhagic crusting accompanied with dysphagia. Lesions were treated unsuccessfully with oral antibiotics. Given no clinical improvement a bullous disease was suspected, and patient was started on prednisone. Laboratory results consisted of pancytopenia, hypoalbuminemia, and acute kidney injury. Tissue cultures were negative for bacteria, fungus, and atypical mycobacteria. Skin biopsy on the right lower abdomen showed ulceration with epidermal dysmaturation and dyskeratosis. Upon further questioning patient reported taking MTX 10 mg daily instead of weekly for her underlying arthritis. MTX was stopped and folic acid replacement was administered with resolution of pancytopenia and mucocutaneous lesions.

Discussion: MEN is a rare, but life threatening adverse reaction that can mimic Steven-Johnson syndrome/ toxic epidermal necrolysis. Risk factors include high doses of MTX, renal impairment, advanced age (>60 years), folate deficiency, and hypoalbuminemia. Severe reactions are dose dependent and commonly seen in tissues with rapid cell proliferation. Our patient experienced severe MTX toxicity after administration of an inappropriate dose. MEN may precede the development of severe organ damage such as bone marrow suppression. Given the rarity of this presentation (fewer than 50 cases had been reported), awareness of this clinical entity can help expedite diagnosis and prompt treatment.

Commercial disclosure: None identified.

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Age and gender–appropriate cancer screening risks missing most occult malignancies in young dermatomyositis patients

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Dermatomyositis (DM) is associated with malignancy in 15%-20% of patients). Screening using United States Preventive Services Task Force (USPSTF) and American Cancer Society (ACS) guidelines may not evaluate many organs susceptible to malignancy. This study was conducted to determine the incidence and types of malignancies in DM patients and estimate cancers missed by age-appropriate screening. The MarketScan Commercial Claims and Encounters database was queried for patients with a diagnosis of DM. The types of cancer in the DM group were determined using ICD-9 codes and compared with malignancies screened for by USPSTF/ACS. 117 malignancies were found in 632 DM cases across all ages. 71% occurred in areas not routinely screened with a statistically significant increase in lymphomas, secondary cancers, leukemias, endocrine, pancreas, stomach and prostate malignancies when compared with controls. 28 malignancies were found in the 330 patients <50. 100% were in organs not screened for with a statistically significant increase in lymphomas, leukemias, prostate, lung, ovarian, pancreas, liver and neuroendocrine malignancies when compared with controls. Our results confirm that DM patients are at an increased risk of malignancy and patients <50 have a significantly increased risk of neoplasia, suggesting age-appropriate screening is likely to miss most malignancies in younger DM populations. One limitation of our study is it does not distinguish blind vs targeted diagnosis. As no Medicare patients were included, our study likely underestimates the population risk of malignancy. Our results support the need for development of evidence-based guidelines to optimize malignancy screening in all DM patients.

Commercial disclosure: None identified.

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Utility of repeated latent tuberculosis testing in psoriatic disease patients taking biologics

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Background: The CDC and US Preventive Services Task Force recommend routine serial latent tuberculosis (LTB) screening in high-risk patients, such as those on immunosuppressive medications. However, little evidence supports this practice is clinically valuable and/or cost-effective in patients on biologics.

Objective: To determine the value of serial LTB screening in psoriatic patients taking biologics and to identify risk factors in these psoriatic patients who convert from negative to positive QuantiFERON TB test (QFT) results.

Methods: We retrospectively reviewed LTB screening results in patients with psoriatic disease treated with biologics at a single, tertiary-care center from 2007 to 2019. Patients without repeat QFT results following biologic initiation were excluded.

Results: We identified 1505 psoriatic patients who were treated with biologics and had >1 repeated QFT result after starting biologic therapy. Of these, 34 patients had >1 positive QFT and 10 (0.66% overall) of these patients converted from negative to positive QFT after biologic initiation. Six of these 10 patients were treated for LTB, 3 of whom had TB risk factors, including travel to endemic TB areas and/or exposure to individuals with TB.

Conclusions: Repeated LTB testing in psoriatic patients taking biologics revealed a low rate of conversion, suggesting low clinical value. Our results do not support the routine use of repeat LTB testing and raise questions concerning its cost-effectiveness in psoriatic patients on biologics. It may be more beneficial to have a focused review of TB exposure risk factors in patients at each clinic visit prior to determining the need for LTB testing.

Commercial disclosure: None identified.