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DERMATOLOGY

Dermatitis in a Unique Occupational Cohort

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Background/Objective: Thousands of flight attendants at several major airlines reported dermatologic symptoms following the introduction of new uniforms. Earlier, we confirmed an increased rate of dermatologic symptoms among Alaska Airlines crew, and now seek to replicate this finding among American Airlines crew. This survey-based prospective longitudinal study investigated skin symptoms in a unique occupational cohort.

Methods: We conducted a time series analysis of self-reported dermatologic symptoms in cabin crew at American Airlines, who were part of the Harvard Flight Attendant Health Survey. This study did query about uniforms, and dermatologic questions were part of the comprehensive survey questions. The comparative standardized prevalence of dermatological symptoms at different study waves were evaluated via Multivariable Generalized Estimating Equations (GEE) regression modeling, with inverse probability weighting (IPW).

Results: When comparing 2017-2018 (uniforms were introduced in 2016) versus 2014-2015, there was an increased prevalence (per 100) of the following: irritant dermatitis (16 versus 8.9; adjusted odds ratio from GEE (aOR)=2.18; 95% confidence interval (CI) 1.19-3.99; P=0.012), seeking care for rash/hives (27.8 versus 11.9; aOR=2.81; 95% CI 1.7-4.64; P=0.002).

Discussion: These findings suggest a correlation between airline uniforms and observed dermatologic symptoms. Airlines, textile manufacturers, national agencies, and private labs have conducted separate laboratory tests and healthhazard reviews on the textiles. While several concerning compounds were detected, none of these have been found to be at potentially hazardous levels. However, flight attendants are exposed to a unique occupational environment, which includes various air contaminants, changes in pressure, oxygenation and humidity, that could potentially mediate these dermatologic effects, and a NIOSH Health Hazard Evaluation suggested that combined chemicals in the uniform could be of causal concern.

Conclusion: The study suggests that in order to enhance the practice of complex medical dermatology and occupational dermatology, skin exposure to chemicals in textiles may need to be studied using models evaluating environmental factors such as ultraviolet radiation and ozone chemistry, concentrations, dispersions with sweat and friction, and chemical interactions.

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A Potential Association between Immunosenescence and Re-pigmentation in Patients with Vitiligo: A Report of Two Cases

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Background: Vitiligo causes T-cell mediated destruction of melanocytes leading to depigmentation of the skin. Re-pigmentation occurs in <25% of patients and knowledge on this mechanism is limited. Patients may have re-pigmentation with therapeutics or experience spontaneous re-pigmentation. We present two unique cases of untreated patients with stable vitiligo universalis who spontaneously re-pigmented as they aged.

Observations: A 62-year-old woman presented with a 55-year history of extensive vitiligo. Her vitiligo had been stable but recently she developed re-pigmentation of her face and arms despite not being on treatment. Punch biopsies showed no evidence of ochronosis. On exam, she was skin type V and had more than 95% depigmented skin with brown perifollicular pigmentation scattered on the cheeks, periorbital region, perioral region, neck, chest and left wrist. Second, a 74-year-old man with a 70-year history of vitiligo universalis presented with re-pigmentation on his face and arms. He was not on any treatments for vitiligo but had used psoralen with no effect as a teenager. On exam, he was skin type III and had 90% depigmented skin with symmetrical pigmented patches and perifollicular pigmented macules on his cheeks, ears, nose, and forearms. Both patients have now been initiated on phototherapy to help with re-pigmentation.

Conclusions: Spontaneous re-pigmentation is more likely to occur in patients with >3 years of stable vitiligo. Both of our patients began to experience regression of disease in their sixties, which is when immunosenscence is reported to begin. Immunosenescence leads to an increase in nonspecific innate immunity and a decrease in adaptive immunity. We theorize that the loss of adaptive immunity in older patients may lead to less T-cell mediated destruction of melanocytes in the epidermis, possibly leading to re-pigmentation in vitiligo. We need further investigation to evaluate the relationship between immunosenescence and re-pigmentation in patients with vitiligo.

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EMERGENCY MEDICINE

Inflammatory Markers Are Not Useful for Identifying Patients With SARS-CoV-2 Infection

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Background: Due to the limited availability of rapid testing for SARS-CoV-2 infection, these tests are often reserved for those requiring urgent procedures or hospital admission and are often not available to emergency department (ED) patients. Complete blood count (CBC), C-reactive protein (CRP) and Ferritin levels can be easily obtained in the ED. Lymphopenia and high C-reactive protein and Ferritin levels are associated with poor outcome in COVID-19 illness. However, it is not known whether these biomarkers are useful for identifying persons with SARS-CoV-2 infection.

Methods: We performed a cross-sectional study of patients 18 years or older who were evaluated at an academic ED for suspected SARS-CoV-2 infection from March to May 2020. CBC, CRP and Ferritin levels were ordered at clinician's discretion in patients who were suspected to have SARS-CoV-2 infection. SARS-CoV-2 infection was diagnosed using a number of PCR-based tests including the Cepheid Xpert Xpress and the Diasorin Simplexa. The discriminative values of the candidate biomarkers were estimated using the area under the receiver operating characteristic curve (AUC).

Results: We studied a total of 1082 patients who had a median age of 59.5 (IQR: 46.0 − 71.0) years. A total of 431 (39.8%) of the subjects had PCR confirmed SARS-CoV-2 infection. The median absolute lymphocyte count was 0.9 (IQR: 0.7 − 1.3) and 1.0 (0.7 − 1.6) in those with and those without SARS-CoV-2 infection respectively (p=0.0004). The median CRP level in mg/L was 8.9 (IQR: 4.6 − 17.3) and 6.1 (IQR: 1.6 − 14.0) in those with and those without SARS-CoV-2 infection respectively (p=0.0001). The median ferritin level in ng/mL was 782 (IQR: 299 − 1479) and 312 (IQR: 106 − 1015) in those with and those without SARS-CoV-2 infection respectively (p=0.0001). Lymphocyte count, CRP and Ferritin levels distinguished between those with and those without SARS-CoV-2 infection with AUCs of 0.56 (IQR: 0.53 − 0.60), 0.61 (IQR: 0.58 − 0.64) and 0.66 (IQR: 0.62 − 0.68).

Conclusion: Although patients with SARS-CoV-2 infection have lymphopenia and elevated CRP and ferritin levels, the levels of these biomarkers are not useful for identifying persons under investigation who have SARS-CoV-2 infection.

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Cannabinoid Hyperemesis Syndrome: A Case Series

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Background: Cannabinoid hyperemesis syndrome (CHS) is a unique syndrome of cyclic vomiting that has only recently been recognized as a functional gastrointestinal disorder. It is