18861

Examining the association between acne vulgaris and gastrointestinal disorders

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Background: Diet and acne have been anecdotally linked. Likewise communication between the gut microbiota and skin is being researched. However, population based data on the association between acne and gastrointestinal (GI) diseases is sparse. The goal was to determine the association between acne and GI diseases.

Methods: Data from the National Inpatient Sample (2000-2014), a database consisting of a ~20% stratified sample of all US hospitalizations, were analyzed. Multivariable logistic regression models were constructed to obtain adjusted odds ratios controlling for socioeconomic demographics in acne vulgaris patients.

Results: Acne vulgaris was significantly associated with increased odds of 10/18 gastrointestinal disorders. Acne vulgaris was associated with autoimmune hepatitis (adjusted odds ratio [95% confidence interval] 4.4 [2.9-6.8]), celiac disease (2.7 [1.9-3.7]), eosinophilic esophagitis (1.4 [1.2-1.6]), gastritis/duodenitis (1.4 [1.2-1.6]), GERD (1.7 [1.6-1.8]), Inflammatory bowel disease (2.3 [2.1-2.6]), irritable bowel syndrome (3.4 [3.0-3.8]), intestinal infections (1.2 [1.0-1.3]), NAFLD (1.5 [1.3-1.8]), and peptic ulcer (1.2 [1.0-1.4]).

Conclusions: Acne vulgaris is associated with numerous GI disorders.

Commercial disclosure: None identified.

18883

Androgenetic alopecia pattern hair regrowth in patients with alopecia areata treated with oral JAK inhibitors

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Alopecia areata (AA) is a nonscarring autoimmune hair loss disorder for which new medications such as JAK inhibitors can result in significant hair regrowth. We present 2 cases of patients with long-standing AA treated with oral JAK inhibitors who regrew hair in a male-pattern baldness distribution. Both patients reported a 10-year history of AA with >50% hair loss and denied a history of androgenetic alopecia (AGA). At 3-month follow up, both experienced diffuse hair regrowth with notable bitemporal recession. Both patients were surprised by the new hair regrowth pattern, as this was not the hair pattern they remembered prior to the onset of AA. While current studies on human hair regrowth patterns are in their infancy, animal studies show that hair regrowth occurs in spreading waves. Early-anagen follicles induce neighboring telogen follicles to enter anagen, resulting in rapid propagation and large patches of hair growth. Furthermore, typical AGA occurs with progressive miniaturization of hair follicles over several hair cycles. In these cases, however, AGA onset is almost immediate. This may suggest that AA-induced telogen hair follicles are immediately sensitive to testosterone and do not require multiple hair cycles to manifest AGA. We present these cases to highlight that patients with AA may experience new hair regrowth patterns, especially as advances are made in the treatment of this recalcitrant disease.

Commercial disclosure: None identified.

18888

Prurigo nodularis and lichen simplex chronicus are associated with considerable mental health burden in US inpatients

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Background: Prurigo nodularis (PN) and lichen simplex chronicus (LSC) are debilitating pruritic diseases that are associated with psychosocial distress. Little is known about the mental health (MH) comorbidities of PN/LSC. We evaluated the MH comorbidities and emergencies associated with PN/LSC.

Methods: Data were examined from the 2002-2012 Nationwide Inpatient Sample, including a representative ~20% sample of US hospitalizations annually (n = 87,053,155). PN/LSC and MH diagnoses were identified using International Classification of Disease—9th Edition codes.

Results: Overall, 10,210 patients had an inpatient diagnoses of PN/LSC. PN/LSC were associated with ≥1 MH disorder (multivariable logistic regression (adjusted odds ratio [95% confidence interval] 2.26 [2.13-2.41]). In particular, PN/LSC were associated with 15 of 15 MH disorders, including personality (4.30 [3.45-5.36]), impulse control (4.23 [2.49-7.19]), attention deficit (hyperactivity) and conduct (3.68 [2.79-4.85]), developmental (3.33 [2.75-4.03]), pediatric (3.24 [1.78-5.90]), psychotic (2.99 [2.64-3.41]), substance abuse (2.82 [2.53-3.14]), mood (2.69 [2.51-2.89]), anxiety (2.40 [2.19-2.63]), adjustment (1.99 [1.38-2.89]), and cognitive disorders (1.83 [1.65-2.03]), suicide or intentional self-inflicted injury (2.69 [2.18-3.30]), alcohol abuse (1.93 [1.72-2.16]), history of MH disorders or substance abuse (1.66 [1.54-1.78]), and other MH disorders (1.73 [1.34-2.24]). PN/LSC were also associated with increased primary hospitalization (2.16 [1.91-2.45]) for 5 of 15 MH disorders, including developmental (9.97 [3.21-30.95]), psychotic (2.59 [2.07-3.25]), and mood disorders (2.34 [1.98-2.78]), history of MH disorders or substance abuse (2.27 [1.26-4.09]), and cognitive disorders (2.14 [1.34-3.41]).

Conclusions: PN/LSC were associated with multiple MH disorders and emergencies requiring hospitalization. Future research is warranted to improve the screening and management of MH disorders in PN/LSC patients.

The following abstracts published here were accepted as online posters.

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18892

Biomimetic scaffold for efficient in vitro skin engineering

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The importance of 3D models of the skin for in vitro studies is increasing, but it can be challenging to create functional and reproducible models. Here we introduce a synthetic biomimetic scaffold that can efficiently and readily creates a 3D environment that mimics the skin. This scaffold is a reversible thermal gel (RTG) that replicates the sheet morphology and is shown to have a similar in structure to collagen. Its structural similarities make it ideal for 3D culturing various skin cell types such as fibroblasts and keratinocytes. The thermosensitive property allows cells to be encapsulated with needed factors, which may improve cell survival and proliferation. Thus, this polymer is ideal for cellular culture in comparison to traditional monophasic scaffolds, which can have nutrient and growth factor challenges. The backbone is modified with RGD, which is an integrin/cell-binding motif found commonly in the extracellular matrix of the skin. To test the polymers ability to be an in vitro model of skin both dermal keratinocytes and fibroblasts were grown within the polymer scaffold. Once encapsulated, the cells were stained via immunohistochemistry with the appropriate cell markers and 3D imaged using confocal microscopy. This study showed dermal fibroblasts and keratinocytes had significant growth and infiltration throughout the 3D polymer scaffold. With this temperature dependent scaffold, 3D culturing can be simplified and has many applications for in vitro drug testing and pathogenesis research.

Commercial disclosure: None identified.