**18739**

**A comparison of the gut and skin microbiome in siblings with and without alopecia areata**

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Alopecia areata (AA) is an autoimmune disease thought to be caused by several factors including stress, genetic predisposition and autoreactive CD8+NKG2D+ T cell attack on the hair follicle. It has been proposed that priming of cytotoxic T cells may be initiated by antigen presenting cells in the gut mucosa, as mediated by the microbiome. A case series of hair regrowth in patients with alopecia universalis after receiving fecal transplants for recalcitrant C. difficile infection has been reported, implicating the gut microbiome in AA development. Previous studies have also found an increase in Propionibacterium of the scalp microbiome in patients with AA. We compared the gut and scalp microbiomes from 2 sisters, one age 54 with alopecia totalis and one age 58 without AA. The healthy woman's gut and scalp microbiomes primarily consisted of bacteria from the phylum Firmicutes. Firmicutes has previously been described as a large component of the healthy human bacterial microbiome. In contrast, the AA sister's microbiomes were predominantly of the phylum Actinobacter, genus Propionibacterium, which is consistent with previous reports of the AA microbiome. This case of distinct microbiomes in individuals affected with AA vs those who are not demonstrates the importance of microbiome integrity in maintaining the health of skin and hair. Continued research in this area may lead to novel treatment options for AA through microbiome modulation.

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**18744**

**Efficacy, cost, and safety of three treatment approaches to managing residual psoriasis in patients on biologic therapy**

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Introduction: While biologics are highly effective, most psoriasis patients do not achieve complete skin clearance with their biologic monotherapy. How to achieve complete skin clearance in psoriasis patients who fail their biologic is not well characterized. To describe treatment approaches in psoriasis patients who fail to achieve complete clearance from their biologic, we assessed the efficacy, cost, and safety of 3 treatment approaches: adding a topical agent with their biologic, escalating the biologic dose, and switching to a different biologic.

Methods: Efficacy of each approach was obtained from literature identifying complete clearance defined as 100% improvement in Psoriasis Area and Severity Index and/or Physician's Global Assessment score of clear. Cost of each treatment was calculated using medication wholesale acquisition cost obtained from Medi-Span Price Rx. Safety was assessed by adverse event (AE) rates.

Results: Complete clearance in patients not cleared on their initial biologic was achieved when adding calcipotriene/betamethasone dipropionate (Cal/BD) foam (28%), switching to guselkumab (20%), and switching to infliximab (15.8%). Adding Cal/BD foam to the initial biologic ($3780 per additional patient cleared) was a less costly approach compared with the lowest cost dose escalation (guselkumab; $73,370 per additional patient cleared) or switching the initial failed biologic to the lowest cost alternative biologic (infliximab; $88,250 per additional patient cleared). There were no treatment-related or serious AEs when adding Cal/BD foam.

Conclusions: Adding a topical agent may be an efficacious, low cost, and safe approach to achieve complete clearing in psoriasis patients who previously failed to clear on their biologic.

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**18756**

**Skin biopsy for the diagnosis of cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy: A report of two cases**

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Skin biopsy has become a useful tool for the diagnosis of extracutaneous diseases as a relatively benign procedure with a good performance. The evaluation of dermal and epidermal innervation and vasculature show distinct changes that support the diagnosis of specific neurologic diseases. Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL) is an inherited angiopathy caused by mutations in the NOTCH3 gene on chromosome 19. It is characterized by stroke and vascular cognitive impairment in the young and other neurological manifestations. Diagnosis is based upon the demonstration of the particular mutations in genetic analysis or the skin biopsy findings on electron microscopy or NOTCH3 immunostaining. We present 2 patients with multiple lacunar infarctions and family history of ischemic strokes without a specific cause. Both patients had a normal skin examination. Electron microscopy demonstrated granular, electron dense and osmiophilic material in the basal lamina of skin vessels. Diagnosis of CADASIL was confirmed upon the ultrastructural findings in the skin biopsy. Patients and their families were enrolled in a specific monitoring and control program. Dermatologists should know about the useful of biopsy in this type of disorder, because, genetic analysis and specific immunostaining are not accessible in all countries, including Chilean health centers. Skin biopsy with electron microscopy analysis provides a powerful tool for the diagnosis of this neurological disease and gives the clinician valuable information to initiate appropriate treatment for these patients.

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**18772**

**The association between chronic graft-versus-host disease and skin disorders**

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Background: Chronic graft-versus-host disease (cGvHD) can lead to cutaneous manifestations of various types. However, there is little known on the associations between cGvHD and specific skin disorders to see which have higher odds of occurring. The goal was to determine these associations.

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

Results: cGvHD patients were significantly associated with increased odds for 7/17 skin disorders examined. cGvHD was associated with lichen planus (adjusted odds ratio [95% confidence interval]): 38.1 [15.2-95.4], actinic keratosis (12.8 [5.89-27.6]), vitiligo (18.2 [9.47-35.0]), cellulitis (2.04 [1.82-2.31]), onychylosis (3.45 [1.29-9.24]), erythema (14.6 [9.71-21.9]), and dermatomyositis (5.15 [1.94-13.7]).

Conclusions: cGvHD is associated with higher odds of certain skin disorders.

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