34612 Exploring the natural history of vitiligo in the United States: Findings from the VALIANT study

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Exosome therapy for scalp hair growth—A review of the in vivo and in vitro evidence

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Background: Exosome therapy is an evolving field that is being investigated for use in treating hair loss. As no human clinical studies exist, we sought to review the in vivo and in vitro available preclinical studies.

Methods: A literature search including the terms, "exosomes and hair," "exosomes and alopecia," and "exosomes and hair loss," was conducted in July 2021 using the PubMed database. Three reviewers assessed the articles for relevance.

Results: 83 articles resulted. 73 articles were eliminated as they focused on ear rather than scalp hair, were repeated or reviewed articles, and/or studied extracellular vesicles instead of exosomes specifically. The remaining 10 articles were reviewed. All 10 were preclinical studies, and 9 of them suggested positive effects on hair growth (2 discussed a prolonged anagen phase, 5 discussed increased hair growth, 5 discussed hair related growth factor alterations). Two of the articles discussed in vivo studies only, 3 of the articles focused on in vitro studies, and 5 included both in vivo and in vitro studies. All of the in vivo studies were mouse or rat studies, while the in vitro studies included mouse, goat, or human cells. Only 1 hair loss disease in a C3H/HeJ mouse model was assessed (alopecia areata), which showed improvement with exosome use.

Conclusions: The preclinical research including both in vitro and in vivo studies suggests that exosome therapy could induce hair growth. However, human clinical studies are needed to verify claims of hair growth prior to exosome therapy initiation in humans.

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Vitiligo is a chronic autoimmune disease characterized by the destruction of melanocytes, resulting in depigmented skin lesions. Epidemiology studies in vitiligo are often limited to smaller sample sizes and rely on dermatology clinics as the source population. The population-based Vitiligo and Life Impact Among International Communities (VALIANT) study sought to understand the natural history of vitiligo among patients around the world. Here, data from US participants are presented. Participants were recruited via an online panel. Adults (aged ≥18 years) who self-reported a vitiligo diagnosis by a health care professional were eligible to participate. Of 608 US patients, 58% were male; median (range) age at the time of the survey was 36 (18−83) years. Mean disease duration was 11 years, with a mean 1.6 years between first noticing lesions and achieving a formal diagnosis. More than one-third of patients were previously misdiagnosed (37%), with higher rates among patients with darker skin types (67% for Fitzpatrick types IV−VI). Nearly two-thirds (62%) directly sought treatment for vitiligo; vitligo was an incidental finding in the remaining 38%. Nearly two-thirds (64%) were diagnosed by a dermatologist, or a nurse practitioner or physician assistant in a dermatology-focused practice. Most patients (71%) noted a family history of vitiligo (comparable paternal vs maternal). Median body surface area affected by vitiligo was 4.23%, as measured by the self-assessed Vitiligo Extent Scale. In summary, these findings provide a new perspective on the diagnosis journey for patients with vitiligo and highlight the need for accurate, more timely diagnosis.

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Facial pyoderma gangrenosum, a diagnostic challenge

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Introduction: Pyoderma gangrenosum (PG) is a rare neutrophilic dermatosis with an unknown pathogenesis, being pathergy the main trigger. This disease usually affects lower extremities and trunk. Head and neck PG is particularly uncommon, occurring in less than 8% of cases.

Case report: A 51-year-old healthy woman presented with a 2-month history of an acute, solitary, painful forehead ulcer, that had been previously treated with systemic antibiotherapy without improvement. The patient reported a traumatism in that area. No systemic symptoms were present. Physical examination showed an ulcer of 3 cm in diameter, with vegetative borders and a cribiform wound bed with pustules. Laboratory tests were normal and bacterial, fungal, and mycobacterial tissue cultures were negative. Skin biopsy was performed, showing a dense neutrophilic infiltrate and giant cells. The clinicopathologic diagnosis was facial PG. The patient underwent systemic therapy with prednisone (0.5 mg/kg/day) with a dramatic improvement.

Discussion: Facial PG occurs with an abrupt onset in the form of pustules and papules that rapidly progress into an ulcer. Clinical differential diagnosis includes mycotic infection, cutaneous tuberculosis, leishmaniasis, malignant tumor, cutaneous lymphoma and factitious dermatitis. Around one third of facial PG cases are associated with underlying systemic disease. The mainstays of treatment of facial PG are systemic immunosuppressive agents, being oral corticosteroids or ciclosporin the treatment of choice. Dapsone, tetraciclines and TNF-α antagonists have also shown efficacy. Prompt diagnosis of facial PG is essential to initiate treatment and avoid scars at facial zone, which could have high psychological impact in the patient.

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Factors associated with eczema clinical trial participation in adults

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There is a paucity of dermatology literature describing motivators and barriers to patient participation in clinical trials (CTs). This study aimed to identify the degree of patient awareness and understanding of CTs, and motivators/barriers to CT participation (CTP) in adults with eczema. The online survey was administered to a National Eczema Association audience of adults ≥ 18 years of age with one or more self-reported forms of eczema. Analysis included univariable and multivariable logistic regression. Of the 1016 participants (mean age 49.4, SD 18.5), 78.2% were female (n = 741). The most common race was White (74.4%, n = 694). Those over 65 years old were less likely (aOR:0.5, 95% CI 0.3-0.7) to have considered CTP compared with those age 18-64 ($P < .001$). Those with poor/terrible general CT understanding were less likely (aOR: 0.5, 95% CI 0.3-0.7) to have previous CT participation versus those with above average understanding. Among participants with some degree of prior CT exposure (participation, attempt or interest), those who were Extremely/Very Confident in their ability to find eczema CT information were more likely (aOR 3.0, 95% CI 1.4-6.8) to have prior CTP compared with those who were Slightly/Not Very Confident. Race, ethnicity, and rural/urban status were not associated with CTP. This is the first study in dermatology to identify barriers to CTP, including age ≥ 65 years and lack of prior CTP, which may contribute to decreased CT awareness and understanding. These data may help identify strategies to improve CTP among a broader demographic and improve trial efficiency, equity, and generalizability.