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Analysis of factors associated with relapse in patients on their second course of isotretinoin for acne

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Oral isotretinoin is commonly prescribed to treat nodulocystic acne and acne that is recalcitrant to standard treatments. Most patients treated with isotretinoin have remission of their acne; however, some patients relapse. Although extensive research has been done, the main factors associated with relapse of acne are still unclear, and the factor of duration of treatment after clearance has only recently been studied. The primary aim of this study was to identify factors strongly associated with the relapse of acne in patients receiving a second course of isotretinoin for treatment. Subjects were identified through a combination of EMR search and chart review. An EMR search was conducted using the ICD 9/10 diagnosis code for acne between the dates of January 2013 and June 2018 at UCLA dermatology. Patients who did relapse and required at least two courses of isotretinoin were compared with other patients in the same time period who were prescribed isotretinoin for acne and did not experience relapse. One-tailed *t* tests were utilized for statistical analysis. Overall, compared with 83 patients taking isotretinoin who required a second course, 220 patients taking isotretinoin without relapse had higher total cumulative isotretinoin doses (134.1 ± 48.0 vs 162.8 ± 45.5 milligrams/kg) and longer average durations of treatment after acne clearance (0.8 ± 1.2 vs 1.4 ± 1.3 months), $P < .001$ and $P = .005$, respectively. Our data suggest that treating acne at a higher cumulative dose and for longer after acne clearance is associated with lower rates of relapse.

Commercial disclosure: None identified.

17986

A novel approach to creating a chronic wound on lower extremity nonmelanoma skin cancers

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Brachytherapy therapy as treatment of nonmelanoma skin cancer is a minimally invasive modality for skin cancer treatment. For elderly patients with medical comorbidities, this is an appealing option. However, in the distal third of the lower extremity, skin tension, poor vascularity, and higher incidence of peripheral arterial disease contribute to poor wound healing. The pathophysiology of radiation exposure to the skin causes endarteritis obliterans, fibrosis, and a hypovascular wound bed serving as poor foundation for wound healing. Our case series suggests skin cancer on the distal third of the leg treated with brachytherapy results in poorly or non-healing wounds as compared with other treatment modalities. Its use should be limited and may require collaboration with a wound healing center in order to manage postprocedural wound healing. We present a series of 10 patients with lower extremity nonmelanoma skin cancers treated with brachytherapy, resulting in nonhealing fibrotic wounds between 3-5 cm in size, taking an average of 2-12 months to heal. Multiple modalities of wound care including advanced dressings, debridement, multilayer compression therapy, and hyperbaric therapy were often employed and necessary to heal the majority of these wounds.

Commercial disclosure: None identified.

17998

Genetic relationship between pilar cysts, proliferating pilar tumors, and pilar cyst carcinomas

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Background: Pilar cysts, also known as trichilemmal cysts, are common cutaneous nodules derived from the outer root sheath of the hair follicle. In rare cases, these cysts transform into proliferating pilar tumors (PPT) or pilar cyst carcinomas.

Objective: This study aimed to determine the genetic relationships between pilar cysts and its variants.

Methods: We performed whole exome (WES) and Sanger sequencing of pilar cysts and matched blood (or other non-lesional tissue representing systemic DNA) from 17 subjects with multiple familial pilar cysts and 15 with a single, apparently sporadic, pilar cyst. We then performed WES and Sanger sequencing on seven subjects with PPTs, one with matched blood, and one subject with a pilar cyst carcinoma matched with blood.

Results: We identified a c.2234G>A somatic mutation in phospholipase C delta 1 (PLCD1), a tumor suppressor gene, in all 21 familial pilar cysts sequenced. In addition, 16 of the 17 subjects with familial pilar cysts were hemizygous for a c.1379G>A germline variant in PLCD1. By contrast, neither of these two mutations were found in subjects with PPTs or the subject with a pilar carcinoma. A potential loss-of-function somatic mutation of the tumor suppressor gene TP53 was identified in the subject with a pilar carcinoma.

Conclusions: Familial pilar cysts result from two hits to the PLCD1 tumor suppressor gene, while PPTs are likely generated sporadically. Furthermore, loss of p53 is a key event causing pilar cysts to evolve into pilar cyst carcinomas.

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18008

Chart-based assessment of atopic dermatiti treatment decision making among dermatology and allergy teams in two health care systems

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Overview: Uncontrolled moderate to severe atopic dermatitis (AD) significantly impacts patients' health, quality of life, and productivity. Through a quality improvement (QI) initiative, we assessed treatment decision-making practices across dermatology and allergy/immunology teams in two health care systems.

Methods: At baseline, we retrospectively reviewed EHRs for 200 adult patients (100 per system) with moderate to severe disease, assessing physicians' performance of quality-based and guideline-directed AD assessment and treatment. Participating dermatology and allergy/immunology teams attended audit-feedback grand rounds to develop action plans to close identified gaps. Post-intervention EHRs will be retrospectively reviewed for 200 AD patients.

Results: At baseline, 66% of patients were female, with a mean age of 43 years (26-89) and mean disease duration of 9 years (0-39); 60% and 35% of patients had moderate and severe disease, respectively. AD affected patients' face (13%), groin (24%), feet (29%) and hands (31%). Treatment included topical PDE4 (2%), anti—IL-4 biologic (5%), topical calcineurin inhibitors (6%), systemic immunomodulators (17%), phototherapy (37%), oral corticosteroids (OCS; 42%), and topical corticosteroids (95%). Among patients prescribed OCS, 9% of charts had documented use of ≥ 10 mg/day for ≥ 60 consecutive days, while 73% of charts had no documentation of OCS dosage or duration. Only 6 charts had a steroid-sparing plan in place. Action plans included improving documentation of steroid use and implementing steroid-sparing strategies.

Conclusions: These findings can inform additional initiatives to improve evidence-based AD treatment and patient outcomes. Post-intervention chart data showing the impact of action plan implementation will be presented at the meeting.

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