**16174**

**Efficacy of applicator devices for self-application of topicals to the back**

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Background: Self-application of topicals on the back can be challenging.

Objective: To assess topical back coverage using commercially available back applicators.

Methods: Ten subjects applied sunscreen to their back using their hands and then with three back applicators (large foam tip, small foam tip, roller tip). The amount of lotion used and the time it took to perform the application were recorded. The resulting distribution of sunscreen was assessed with a Wood's lamp; area covered fluoresced less than uncovered skin. Images were captured and then analyzed using an automated thresholding technique.

Results: Subjects applied more lotion when using the large foam tip (7.58 grams; $P < .004$) and small foam tip (7.46 g; $P < .006$) applicators compared with hands alone (6.22 g). Application time was longer with the small foam tip applicator (113 seconds) relative to hand application (79 s) ($P < .03$). Coverage of the back was higher for the large foam tip (84.8%; $P < .03$), small foam tip (88.0%; $P < .006$), and roller tip (84.3%; $P < .04$) applicators compared with hand application (71.5%). The middle back tended have less coverage when applying with the hands.

Limitations: The subjects were 21-31 years of age, and the findings may not be indicative of an older population.

Conclusions: Applicator devices facilitate better topical coverage of the back than hand application, especially the middle back.

*Commercial disclosure: None identified.*

**16177**

**Assessment of conjunctivitis occurring in patients with long-term use of dupilumab for the treatment of atopic dermatitis in clinical practice**

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An ongoing safety concern with dupilumab treatment for atopic dermatitis has been the high incidences of conjunctivitis. While incidences of conjunctivitis ranged from 5%-28% in clinical trials, subsequent real-world studies have reported rates of up to 50%. However, implications of the adverse event (AE) with long-term use of dupilumab remains largely unknown. To further characterize conjunctivitis and other ocular surface disorders (OSD) with long-term dupilumab treatment, a retrospective chart review was conducted of consecutive patients receiving dupilumab at two Canadian tertiary hospitals. Fifty-eight patients met inclusion criteria (≥52 weeks of dupilumab or discontinued before 52 weeks due to an OSD) and 2 patients were excluded for missing 52-week appointment data. 21/58 patients (36%) reported conjunctivitis or other OSDs. Onset of symptoms ranged from week 1-32 of treatment, with 17/21 cases (81%) occurring in the first 16 weeks. Despite high incidences of OSDs early on, only 52% of cases resolved, 14% of cases improved, and 24% of cases were ongoing by week 52. Two patients discontinued due to ocular AEs. While one patient discontinued solely due to ocular symptoms at week 48, another discontinued due to watery eyes in conjunction with nonocular symptoms (arthralgia, symmetric numbness) at week 19. Although a majority (81%) of the onset of conjunctivitis occurred in the first 16 weeks, many patients (38%) experienced persistent symptoms even at week 52. Therefore, closer follow-up appointments are recommended to optimize management of patients with ocular symptoms at week 16, as symptoms may persist and impact treatment adherence.

*Commercial disclosure: None identified.*

**16180**

**Clinical and histopathologic features of pityriasis lichenoides et varioliformis acuta in association with malignancy: An observational study**

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Background: Pityriasis lichenoides et varioliformis acuta (PLEVA) is a rare cutaneous inflammatory disorder of unknown etiology. Although PLEVA is generally accepted as a disease with a benign clinical course, rare reports of the development of cutaneous T-cell lymphoma exist. It is unknown whether PLEVA may be associated with other forms of malignancy. We report 10 cases of paraneoplastic PLEVA in association with extracutaneous malignancies.

Methods:: Retrospective chart and histopathologic review of individuals with a biopsy-confirmed diagnosis of PLEVA from January 2007 to October 2018 at a tertiary referral center. Malignancy-associated PLEVA was defined as PLEVA occurring within 5 years before or after the diagnosis of malignancy.

Results: Among 71 individuals diagnosed with PLEVA, 10 were identified with malignancy-associated PLEVA (5 diagnosed with PLEVA prior to malignancy, 1 with concurrent diagnoses, and 4 with PLEVA after malignancy). The clinical and histopathologic features of malignancy-associated and classic PLEVA were similar. Among the 10 with malignancy-associated PLEVA, 7 developed a hematologic malignancy, including polycythemia vera, multiple myeloma, aplastic anemia, diffuse large B-cell lymphoma, lymphoplasmacytic lymphoma, non-Hodgkin lymphoma and peripheral B-cell lymphoma of the tongue. The remaining 3 patients developed cancers of the urogenital system (2/10) and colon cancer (1/10).

Limitations: Single-institution retrospective review with a small sample size.

Conclusions: In addition to recommended age-appropriate screening in patients with PLEVA, we advocate for evaluating patients with concerning signs or symptoms for an underlying neoplasm. Key Words: pityriasis lichenoides et varioliformis acuta; paraneoplastic; malignancy.

*Commercial disclosure: None identified.*

**16184**

**Risk stratification of severely dysplastic nevi with the use of noninvasively obtained gene expression and mutation analyses**

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Rule-out strategies to noninvasively detect cutaneous melanoma generally focus on differentiating melanoma from nonmelanoma lesions. However, given the variabilities in practice and lack of guidelines, it is important to understand how such technologies perform on borderline lesions of uncertain clinical behavior. Data from 103 eligible skin lesions clinically suspicious for melanoma were noninvasively sampled via adhesive patches to enable genomic analyses. The same lesions were surgically biopsied immediately afterward to enable comparisons with histopathologic diagnoses rendered by a panel of three dermatopathologists. Twenty-three of the lesions analyzed were deemed borderline lesions of SDN by at least one of the readers. RNA-based gene expression positivity by Pigmented Lesion Assay (PLA) was defined by detectable levels of LINC and/or PRAME. DNA-based mutation positivity was defined as the presence of somatic mutations in BRAF (non-V600E), NRAS, and/or the TERT promoter. PLA positivity was found in 61% of histopathologically SDN; these lesions harbored TERT mutations in only 4% of cases. No BRAF or NRAS mutations were detected in the SDN evaluated. Melanomas were positive by PLA in 93% while carrying any studied hotspot driver mutations in 73% and TERT mutations in 70%. Adding TERT mutation analyses to PLA testing elevates test sensitivity to 97%. Forty-five percent of all 'false positive' PLA test results and 70% of 'false double positive' nonmelanoma PLA results are attributable to SDN clinicians generally prefer to remove. Technically false positive SDN PLA results may therefore not be 'false' clinically. TERT mutations also help differentiate SDN from early melanomas.

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