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Basal cell carcinoma gene mutations and polymorphisms differ between Asian, Hispanic, and Caucasian patients

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Introduction: Basal cell carcinoma (BCC) is the most common cancer worldwide, with ~4.3 million cases annually. Research on the development of BCC has identified several genes that have a role in BCC pathogenesis, namely SMO and PTCH1. While BCC mutations have been extensively studied in Caucasian patients, research is lacking in patients of other races. Many BCC drug treatments, such as vismodegib, target specific products of mutated genes. Thus, discovering a potential difference in gene mutations for patients of different races has significant clinical relevance.

Objective: To identify potential variations in BCC gene mutations between Asian, Hispanic, and Caucasian patients.

Methods: A cohort of 23 BCC patients from an academic medical center was developed for this study. Patients were divided into Asian, Hispanic, and Caucasian cohorts (n = 5, n = 10, and n = 8, respectively). Using a next generation sequencing (NGS)-based hotspot mutation panel on 76 cancer-associated genes (Vela Diagnostics), formalin-fixed paraffin-embedded (FFPE) tissue samples from 23 BCCs were sequenced for gene mutations and were statistically analyzed. Germline mutations and somatic mutations were separated using variant allele frequencies and databases COSMIC, ClinVar, and dbSNP.

Discussion and Conclusions: The results from this study show significant differences in somatic mutations of GATA3 ($P = .04$) and polymorphisms in SMO, ALK, and HRAS ($P = .002$, $P = .02$, and $P = .05$, respectively) between cohorts of BCC patients. These findings could impact the efficacy of BCC gene-targeted therapies and may help identify novel targets. Future studies with larger sample sizes may give more conclusive evidence to specific mutation frequencies seen in patients of different races.

Commercial disclosure: None identified.

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Growth strategy of private equity in dermatology: Organic growth and acquisitions, 2018-2019

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Background: Private equity (PE) firms have invested in a growing number of dermatology practices, yet little is known about expansion through organic growth, defined as the opening of new clinics. We quantified acquisitions and organic growth of 19 dermatology management groups (DMGs), physician practice management firms operating a network of clinics, from July 2018 to 2019.

Methods: This cohort study charted expansion over time of DMGs with PE investment through an evaluation of changing clinic affiliations listed on their official websites. Clinic locations were classified as either acquisitions or organic growth through a systematic search of five financial databases (Capital IQ, CB Insights, PitchBook, Thomson ONE, Zephyr) that was supplemented by data from financial news outlets, press releases, and additional financial databases.

Results: PE investment fueled expansion of DMGs through two primary growth strategies: 1) acquisition of physician-owned practices and 2) organic growth. 161 new clinics became affiliated with these DMGs between July 2018-2019. Two-thirds of these clinics (109) were acquired and nearly one-third (52) were opened organically. Expansion occurred in states with many existing DMG-owned clinics, as well as states largely untapped by PE. 86 additional clinics affiliated with these DMGs in July 2018 were no longer affiliated in July 2019, suggesting that clinic locations had closed or relocated.

Conclusions: Both acquisitions and organic growth have contributed to the expanding footprint of PE in dermatology. Further research is needed to evaluate how organic growth and DMG growth strategy may affect provider staffing and the continuity and accessibility of care.

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Immune Prognostic Index as a predictor of survival in patients with metastatic melanoma treated with immune checkpoint inhibitors

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Background: Immune checkpoint inhibitors (ICIs) are driving a paradigm shift in metastatic melanoma. However, survival with ICIs varies by baseline hematologic indices including derived neutrophil to lymphocyte ratios (dNLR). Similarly, an index of baseline lactate dehydrogenase (LDH) and dNLR is prognostic in metastatic non-small cell lung cancer, thus we aimed to evaluate this Immune Prognostic Index (IPI) in metastatic melanoma.

Methods: We conducted a multicenter cohort study of metastatic melanoma patients treated with ICIs (n = 131). IPI is determined by the sum of 2 dichotomized factors: whether LDH > upper limit of normal and dNLR >3. Patients were stratified by IPI into "good" (0 factors), "intermediate" (1 factor) and "poor" (2 factors) status. The Kaplan-Meier method with log-rank tests was used for estimating overall survival (OS) and progression-free survival (PFS) by IPI status. Multivariate Cox proportional-hazards models were used to estimate hazard ratios, adjusted for age, performance status and treatment line.

Results: Median OS in the good (n = 59), intermediate (n = 51) and poor (n = 21) IPI groups were 32.8 (95% CI 24.8 to undefined); 7.2 (95% CI 3.6-12.1) and 2.4 (95% CI 0.7-3.7) months, respectively ($P < .0001$). Poor and intermediate IPI were associated with worse OS compared with good IPI status (HR 7.9, 95% CI 4.1-15.2 and HR 3.3, 95% CI 2.0-5.3, $P < .0001$). Similar significant associations were observed between IPI and PFS with Kaplan-Meier and Cox models ($P < .0001$).

Conclusions: IPI status is independently prognostic of OS and PFS in metastatic melanoma patients. Future research should aim to explore whether IPI can be combined with other clinical or pathologic markers to create a more personalized prognostic tool.

Commercial disclosure: None identified.

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Dietary factors in patients with hidradenitis suppurativa

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Introduction: Diet is a modifiable factor in hidradenitis suppurativa (HS). However, data regarding the relationship of diet and HS is very limited. This study explored dietary habits in HS patients.

Methods: From 2017 to 2019, 856 anonymous surveys were collected at HS specialty centers and through international HS support groups (Hope For HS, International Association of HS Network, HS Warriors).

Results: Mean age of respondents is 35 (range 16-74). The majority of patients are Hurley stage II or III (51.3% and 35.9%, respectively). 82.8% have at least one comorbid condition. Diabetes, hypertension, and lung disease are associated with a higher Hurley stage ($P = .0058$, $P = .01$ and $P = .031$, respectively). Red meat consumption of >5 times/week most significantly correlates with higher Hurley score ($P = .0021$). Lower income (mean $27,055) is more associated with eating out at least once daily compared with higher income (mean $57,965) ($P = .00074$). Most respondents are able to identify foods that trigger or alleviate HS symptoms, (51% and 59% respectively). Sweets are the most commonly reported food exacerbating HS (23.0%), followed by complex carbohydrates such as bread or pasta (17.0%), dairy (16.8%), and high-fat foods (13.4%). Fruits and vegetables are most frequently associated with improving HS symptoms (16.6%), followed by chicken (6.2%) and fish (4.8%). Only 35.4% of respondents report receiving lifestyle and diet counseling for HS from a health care provider.

Conclusions: HS is influenced by dietary habits and pre-existing comorbidities. Future investigations to evaluate the value of nutritional counseling and specific dietary interventions in modifying HS outcome are warranted.

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