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Identifying locations of Merkel cell carcinoma associated with higher disease-specific mortality
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Merkel cell carcinoma (MCC) can occur anywhere on the skin surface, yet an understanding of whether tumor primary site impacts prognosis is currently incomplete within the literature. To best address this knowledge gap, we designed a study to analyze disease-specific mortality, rather than overall survival, outcomes of patients with MCC. A systematic survey of the literature review showed that MCC tumor primary sites were often not clearly specified and therefore may be at risk of dying from MCC. Therefore, a death from any other cause represents a competing risk outcome. As such, we applied a competing risk analysis using the Fine-Gray model to investigate disease-specific mortality among patients within the study. Survival, epidemiology, and End Results (SEER) database (1973-2016), with MCC tumor site as the primary variable of interest. With the results from this model, we calculated the 5-year cumulative mortality incidence (i.e. probability of mortality), for tumors at nine primary sites (ear, eyelid, lip, scalp, neck, other site of face, trunk, upper limb, lower limb and unknown primary site), stratifying by stage at diagnosis. Of the 9407 MCC patients identified, 6105 (65.7%) had localized disease, 2397 (25.5%) had regional metastasis, and 705 (7.5%) had distant metastasis. Primary tumor site was predictive of cumulative mortality incidence (p < 0.0001), with all stages at diagnosis. MCC involving the scalp/neck carried the highest cumulative mortality among localized tumors (24.3%) and regionally metastasized tumors (48.8%). Early-stage, localized MCC patients have the highest cumulative mortality (89.5%). Further, an unknown primary site was found to have a lower cumulative mortality incidence than some, but not all cutaneous tumor sites. Implications of these findings largely pertain to the prognostication of MCC outcomes. AEC staging guidelines may incorporate tumor primary site, as well as specific stratification. Consideration of treatment escalation may be warranted for tumor sites with worse prognosis.

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SMASH: Perceived stigma and social health in patients with chronic skin disease
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Skin human exposure to chemical irritants such as alkylating agents can induce blisters and skin irritation due to both direct cellular damage and a pro-inflammatory response. In murine models, 25-hydroxyvitamin D3 (D3) mitigates the inflammatory effects of topical alkylating agent nitrogen mustard (NM) and similarly reduces inflammation from experimental sunburns in humans. In this double-blinded, placebo-controlled interventional trial, we set to investigate whether high dose D3 can mitigate skin irritation resulting from topical NM. 28 healthy adults had 4mm of skin exposed to NM (FDA-approved 0.016%/g) under occlusion on one forearm at 0 exposure and 7 days (day 7) after 25-hydroxyvitamin D3 (200,000 IU daily). Subjects were randomized to receive either 200,000 IU oral D3 or placebo at the second NM exposure. Skin biopsies from both groups demonstrated brisk infiltration with mixed immune cells. However, proxim extension assay using a panel of 1.299 inflammatory protein markers revealed 37 differentially expressed proteins (DEPs) in the placebo group and 24 in the D3 group. There was a 6-weeks from second exposure the number of DEPs in the placebo group was unchanged whereas the D3 group demonstrated a 79% reduction to 5 DEP. The D3 group had reduced skin redness by chromameter assessment at one week after the second exposure (p = 0.02). In the D3 group, 10 out of 14 subjects (71.4%) were confirmed D3 responders with sustained increase in serum 1,25-dihydroxyvitamin D3 over one week. The placebo group had no more redness on the second exposure compared to the first exposure at every time point (p = 0.002). D3 responders did not experience any drug-related side effects. The results show that D3 mitigates skin irritation due to chemical injury and may be an additive to a prophylactic treatment to reduce side effects in patients receiving NM for cutaneous T cell lymphoma.