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Abstract

Cigarette smoking and the risks of incident basal cell carcinoma and squamous cell carcinoma in a large population-based cohort study

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Tobacco smoking is a strong risk factor for cancer, but associations with basal cell carcinomas (BCC) and squamous cell carcinomas (SCC) of the skin have been inconsistent. We prospectively investigated the associations between cigarette smoking and 3-year incidence of first primary BCC or SCC in the QSkin cohort (n=43765). Smoking history was self-reported at baseline; newly diagnosed and surgically treated BCCs and SCCs were ascertained through linkage to the national health insurance scheme and verified by histopathology reports. We restricted our analyses to white participants who at baseline reported no past history of skin cancer excisions or cutaneous melanoma (registry-confirmed) and no more than 5 destructively-treated skin lesions (n=18830). Cox proportional hazards regression analysis was used to examine the association between smoking status and risk of BCC and SCC, adjusted for demographic and phenotypic characteristics and sun exposure history. Current smokers had significantly lower risks of BCC (HR 0.6; 95% CI, 0.4-0.9) but significantly increased risks of SCC (HR 1.9; 95% CI, 1.1-3.1) compared with never smokers. Former smoking was not associated. In analyses restricted to people with no past history of destructively-treated lesions (n=13323), we found a non-significant decreased risk of BCC (HR 0.8; 95% CI, 0.5-1.3) and a significant increased risk of SCC (HR 2.3; 95% CI, 1.3-4.4) among current smokers compared to never smokers. Future analyses will investigate associations with age at initiation, duration and intensity of smoking, and time since quitting. These findings suggest current smoking is a risk factor for cutaneous SCC but not BCC.