

Unequal Burden of Melanoma: How Socioeconomic Status is Associated with Secondary Primary Malignancy Risk and Mortality

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Background/Objective: Melanoma is the 5th most common cancer in the U.S. There is limited literature on how socio-economic status (SES) is associated with risk of secondary primary malignancies (SPMs), despite 2.1% of population living with a melanoma history. This study examined the relationship between SES and 1) incidence of SPMs in early-stage melanoma patients, and 2) survival in metastatic melanoma patients.

Methods: A retrospective cohort study was conducted using data of 481,603 stage 0/I/II melanoma patients from 2006-2020 and 1,089 metastatic melanoma patients from 2016-2020. Patient's SES quintile was calculated using census tract level information including median household income, median house value/rent, education index, etc. Data on primary and secondary malignancies and cancer stage at diagnosis were analyzed using binomial and ordinal logistics regression. Survival outcomes were analyzed using Kaplan Meier and multivariate Cox regression.

Results: Patients with lower SES have significantly higher risks of developing higher stage SPMs (Stage I/II Group 1-lowest SES: OR 1.39, 95% CI 1.28-1.51) and metastatic SPMs (Stage I/II Group 1: OR 1.35, 95% CI 1.2-1.52). Group 5 (highest SES) served as reference. Conversely, patients with higher SES have a higher overall incidence of SPMs compared to lower SES groups (Stage I/II Group 1: OR 0.82, 95% CI 0.78-0.86). Results were significant across all SES levels, except for Group 4 with stage 0 melanoma. Five-year survival analysis revealed metastatic melanoma patients with lowest SES are most at risk of dying (Group 1: HR 1.54, 95% CI:1.15-2.08).

Conclusion/Implications: This study shows the significance of socioeconomic disparities in melanoma outcomes. Patients with lower SES are at greater risk of developing higher stage SPMs and have poorer survival rates, whereas higher SES patients are more likely to be diagnosed with SPMs. Our findings highlight the need for targeted interventions to address SES-related disparities in melanoma prevention and care.