Lung Cancer Metastasis Patterns and Racial Disparities: A SEER Database Population Study 2010–2018

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The risk of brain metastasis is higher in African Americans in all subtypes but lung adenocarcinoma

African Americans had a higher risk of liver metastasis in squamous and adenocarcinoma but a lower risk in other subtypes

Caucasians had a higher risk of bone metastasis in small cell lung cancer while it was higher in African Americans in squamous adenocarcinoma

Metastatic disease at the time of diagnosis of lung cancer is a strong predictor of poor outcomes. Differences in metastatic patterns among Caucasians (C) and African-Americans (AA) needs further elucidation. In this study, we analyzed the patterns of metastasis in C and AA in small cell lung cancer (SCLC), squamous cell lung cancer (SCCLC), lung adenocarcinoma (LAC), and large lung cancer (LCLC) subtypes.

BACKGROUND
Metastatic disease at the time of diagnosis of lung cancer is a strong predictor of poor outcomes. Differences in metastatic patterns among Caucasians (C) and African-Americans (AA) needs further elucidation. In this study, we analyzed the patterns of metastasis in C and AA in small cell lung cancer (SCLC), squamous cell lung cancer (SCCLC), lung adenocarcinoma (LAC), and large lung cancer (LCLC) subtypes.

METHODS
We identified patients with small, squamous, adenocarcinoma, and large lung cancer subtypes from the Surveillance, Epidemiology, and End Results Program (SEER) database from 2010-2018. We obtained metastasis data to bone, brain, and liver at the time of diagnosis. We calculated the relative risk (RR), confidence interval (CI), and standard error with the use of SPSS software, version 28.0 (IBM).

RESULTS
The risk of brain metastasis (BM) is higher in AA in all subtypes but LA. BM was highest in SCLC and LCC 14-16%. AA had less liver metastasis in SCLC and LCC but higher in SQC and LA. C had higher bone metastasis in SCLC. Organ with most metastasis was identical in AA and CC; liver in SCLC and LA, and bone in SQC and LCC.

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Conclusions
This study shows disparities in lung cancer subtypes metastasis amid AA and C. Studies of biological and other factors are needed.