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Cancer Prediction Model Misses High-Risk Black Patients

Black men are more likely to die from lung cancer than persons of any other racial or ethnic group. A new study suggests that better detection could reduce that disparity.

“Black individuals develop lung cancer at younger ages and with less intense smoking histories compared to white individuals,” says the study’s leader, Julie Barta, MD, assistant professor in the division of Pulmonary and Critical Care Medicine.

Patients referred for lung cancer screenings are otherwise healthy, but identified by their doctors as being at high risk via algorithm-based risk prediction models

derived from data that includes just five percent or fewer Black individuals.

Dr. Barta and team found that a commonly used risk prediction model—the Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial modified logistic regression—does not identify many high-risk Black patients who could gain life-saving benefit from early screening.

The finding emerged from the team’s cross-sectional, retrospective study of 1,276 Black and white patients enrolled in the Jefferson Lung Cancer Screening Program. It found that white patients with screen-detected lung cancer generally had high lung cancer risk scores; and, theoretically, there should have been a similar finding among Black patients. However, the researchers found that despite having a definitive lung cancer diagnosis, Black patients were actually defined by the model as lower risk.

“The study leads us to suggest multiple changes in the present approach,” Dr. Barta says. “For example, criteria for lung cancer screening should be expanded to include more diverse populations; and risk-calculation models should include factors such as environmental contributors, access to health care, and other social determinants of health.”

“Our research is an important step toward reducing disparities in screening and early detection of lung cancer,” she observes. ■

KM, MM

