Gene in Black People Can Result in Needless Bone Marrow Biopsies

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Lower levels of white blood cells in a patient's blood sample can signal a health problem. However, some healthy Black Americans carry a gene variant that gives rise to a low white blood cell count, which may lead doctors to prescribe potentially unnecessary and painful bone marrow biopsies, according to findings published in JAMA Internal Medicine, HealthDay News reports.

For the study, researchers reviewed information on 399 Black patients under age 90 who underwent a bone marrow biopsy between 1998 and 2020. Scientists found that of the 35 patients who received the procedure because their white blood cell count was low, 34 of them (97%) possessed the genetic variant. (In comparison, 67% of Black patients got bone marrow biopsies for other reasons.)

Researchers also noted that the biopsies for 97% of those patients with the gene variant were normal, compared with 55% normal for those who underwent biopsies for other reasons. (Among Black Americans, 63% of individuals express two copies of this gene variant.)

Jonathan Mosely, MD, PhD, assistant professor of medicine and biomedical informatics at Vanderbilt University Medical Center and a study author, noted that what's considered a normal range for white blood cell counts rests on averages calculated from white people.

"We've essentially created this racial health disparity by not fully considering how genetic variation affects white blood cell levels," Mosely said. "Our study supports genotyping African Americans before performing a bone marrow biopsy for the indication of low white blood cell counts."

Study coauthor Sara Van Driest, PhD, associate professor of pediatrics and medicine at the university added, "We hope that in the future, we can do a better job at recognizing these individuals with a benign cause for their low white blood cell counts so that bone marrow biopsies can be avoided."

To learn more about how a lack of diversity in clinical research could be leading to racial health disparities in the United States, read "Diverse Cell Lines Matter in Preclinical Research."

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