

Precursor of multiple myeloma more common in blacks than whites, study finds (w/ Video)

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Blacks may be twice as likely as whites to develop multiple myeloma because they are more likely to have a precursor condition known as monoclonal gammopathy of undetermined significance (MGUS), a Mayo Clinic study has found. Not only is MGUS more common in blacks, but the type seen in the black population is also more apt to have features associated with a higher risk of progression to full-blown multiple myeloma, a cancer of a type of white blood cell in bone marrow.

The findings, which appear in the journal *Leukemia*, are from the first nationwide study to look at the precursor of multiple myeloma in blacks, whites, and Hispanics and could point the way toward tailored screening and preventive strategies for different racial groups. The study also uncovered different rates of the condition in different parts of the country, suggesting an environmental component to the racial disparities.

"We have known for a long time that there is a marked racial disparity in multiple myeloma, but the big question has been why that disparity exists," says the study's senior author, Vincent Rajkumar, M.D., a hematologist/oncologist at Mayo Clinic. "We suspected it may be genetic or it may be environmental. We also thought that the predisposing factor is more common, or it may be that the predisposing factor progresses to cancer much more quickly. We found that the answer is all of the above."

Multiple myeloma kills more than 10,000 Americans a year. The disease is caused by malignant cells that spread throughout the bone marrow and produce abnormal levels of M protein. Multiple myeloma is almost always preceded by MGUS, a premalignant condition in which levels of M protein are abnormally high. A number of studies have investigated the prevalence of MGUS in various populations. The most prominent took place in the predominantly white community of Olmsted County, Minn. There, researchers estimated that the premalignant condition occurred in approximately 3.2 percent of individuals ages 50 years and older.

In this study, Dr. Rajkumar and his colleagues at Mayo Clinic, the National Cancer Institute and the Centers for Disease Control and Prevention set out to determine the prevalence of MGUS in blacks and Hispanics, as well as whites in other parts of the country. They analyzed stored serum samples of 12,482 people over 50 years old from the National Health and Nutritional Examination Survey (NHANES), a nationally representative sample of the U.S. population.

By examining the M protein present in each sample, the researchers assessed both the prevalence of MGUS and its likelihood for progression. They found that the prevalence of MGUS was significantly higher in blacks (3.7 percent) compared with whites (2.3 percent) or Hispanics (1.8 percent), as were features that posed a higher risk of progression to multiple myeloma.

The researchers were surprised that the prevalence of MGUS in whites in their national sample was significantly lower than the rates previously reported for Olmsted County. However, when they broke down the national numbers into geographic regions, they found that people living in Northern and Midwestern states have a higher incidence of MGUS than those living in Southern and Western states.

"We would have missed this geographic difference if we hadn't looked at the whole country," says Dr. Rajkumar. "This is the largest study of its kind, and the first to look at MGUS in a sample of the entire U.S. population."

Dr. Rajkumar and his colleagues are now investigating the underlying causes of these geographic variations to see if they identify the genetic and environmental factors contributing to the risk of MGUS. They are also repeating their experiments in samples from individuals under age 50 in an effort to pinpoint when the risk of MGUS and, ultimately, [multiple myeloma](#), begins.

Provided by Mayo Clinic

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