Researchers find significant racial disparities in who has access to CAR-T therapy

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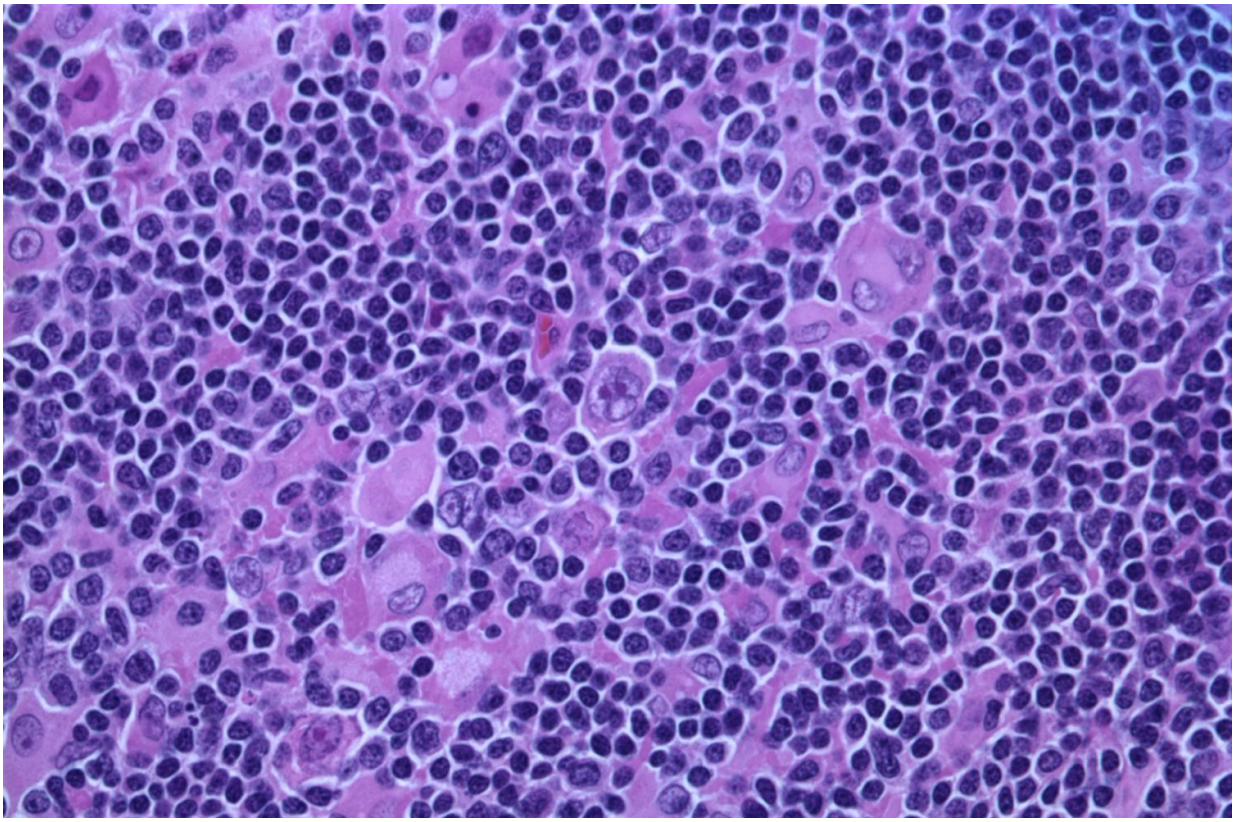

Hodgkin lymphoma, nodular lymphocyte predominant (high-power view) Credit: Gabriel Caponetti, MD./Wikipedia/CC BY-SA 3.0

Penn Medicine's patients of color are far less likely than white patients to receive a novel gene therapy pioneered there and hailed as a cure for

some blood cancers, new research shows.

Researchers at the University of Pennsylvania found significant racial disparities in who gets treated with chimeric antigen receptor T-cell therapy, known as CAR-T, a treatment that involves genetically modifying white blood cells to attack cancer.

Patients from non-white racial and ethnic groups accounted for about 16% of lymphoma patients at Penn's Abramson Cancer Center between 2018 and 2022, but just 7% of lymphoma patients who received CAR-T therapy, according to a study published in March in the New England Journal of Medicine Evidence.

The study did not explore why patients from underrepresented racial groups are less likely to receive CAR-T. But researchers suspect the problem is rooted in a mix of socio-economic and systemic barriers that contribute to much of the racial disparities in health care: cost, travel, language, health status, and doctors' racial bias.

CAR-T is considered the ultimate in personalized medicine. It involves removing the body's white blood cells and genetically modifying them to target each individual's unique cancer cells. The white blood cells are infused back into the body as a tailor-made army against blood cancers.

More than 1,600 clinical trials are exploring whether it can treat brain cancer, breast cancer, and others.

"All of this is useless, pointless, if there are barriers that don't allow us to provide this therapy" to all patients, said Marco Ruella, an assistant professor of medicine at Penn and senior author of the study.

Researchers said they hope their findings will be a first step toward improving access to a treatment with significant barriers. CAR-T can

cost up to $1 million and is only available at a handful of specialized cancer centers, including at Penn.

Racial gaps in CAR-T treatment for lymphoma

Researchers studied medical records of nearly 1,500 patients treated for lymphoma at Penn between 2018 and 2022. They found that white patients were far more likely to receive CAR-T treatment than those who identified as Black, Hispanic, Latino, American Indian, Alaskan Native, Asian, or Native Hawaiian.

White patients accounted for 85% of all lymphoma patients at Penn during the study period and 94% of lymphoma patients who received CAR-T. Meanwhile, patients from minority racial and ethnic groups accounted for about 16% of lymphoma patients, and just 7% of lymphoma patients who received CAR-T therapy.

The findings were a stark reminder that the health system must work harder to improve widespread racial disparities in cancer treatment, Ruella said.

"If we really want to make an impact on our nation's overall health, we shouldn't leave people behind," he said.

Cost, access, and doctor bias contribute to disparities

Cancer death rates are declining overall, but patients from minority groups are more likely to experience treatment delays, end treatment early, and receive care at lower-quality cancer centers, according to a report published last month by the American Association for Cancer Research, a Philadelphia-based organization that represents cancer researchers.

This may reflect factors such as who can take time off work, secure child care, and afford co-pays, transportation, and hotel rooms. Patients must often travel to specialty cancer centers—especially for highly advanced treatments, such as CAR-T—which can be difficult and costly for those who live far away.

Clinical trials testing the latest emerging cancer therapies are also less likely to enroll racial minorities, which contributes to ongoing disparities in cancer treatment, said Camille Ragin, an epidemiologist and associate director of diversity, equity, and inclusion at Fox Chase Cancer Center.

"Because clinical trials are not diverse, we have been making the assumption that the findings from these clinical trials are generalizable to all population groups, and there's already lots of evidence to suggest that may not necessarily be true," said Ragin, who helped author the AACR report.

Clinicians' bias can affect who gets access to the most advanced services and is considered for a clinical trial, said Carmen Guerra, associate director of outreach at Penn's Abramson Cancer Center.

For instance, a doctor may assume that a patient who comes to appointments alone won't have the support system needed to be part of a rigorous treatment regimen, or that a patient who doesn't speak English won't fully understand the requirements of a new trial, she said.

Penn's plan for addressing CAR-T disparities

Ruella and his colleagues aren't sure yet how best to address the disparities they identified among lymphoma patients. They are working with Guerra to better understand why the disparities exist and develop a plan.

Some barriers to advanced cancer treatment are easier to address. For instance, Guerra helped develop a training for doctors that calls for them to talk to all patients about clinical trials, so doctors will not make potentially biased judgments about which patients are good candidates.

But factors leading to disparities in CAR-T access may be challenging to unravel, Guerra said.

"The barriers are more pronounced because CAR-T is such a uniquely complicated therapy," Guerra said.