TuSalud

Patients Can Safely Receive Stem Cell Transplants From Mismatched, Unrelated Donors

Treatment with cyclophosphamide could make transplants accessible to nearly all patients with blood cancers, regardless of ancestry.

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- ACCESS study reveals patients can safely receive stem cell transplants from unrelated donors with multiple genetic mismatches.
- A protective regimen acts as a “bridge,” preventing complications and boosting survival rates.
- Findings could make transplants accessible to nearly all patients with blood cancers, regardless of ancestry.

MIAMI – For years, the search for a stem cell donor has felt like a quest for a rare key—one that fits a lock with eight intricate tumblers, each representing a genetic marker. For many patients with blood cancers, especially those from diverse backgrounds, the right key simply didn’t exist. The door to a cure remained closed.

But a new study, led by a national, multicenter team including Antonio Jimenez Jimenez, MD, associate professor of medicine in the division of transplantation and cellular therapy at Sylvester Comprehensive Cancer Center, part of the University of Miami Miller School of Medicine, suggests the lock itself is changing. Thanks to a protective regimen and a fresh look at donor compatibility, the door to life-saving transplants may be swinging open for nearly everyone.

Jimenez Jimenez is no stranger to this frontier. As a senior author and physician-scientist at Sylvester, he has been at the forefront of research on graft-versus-host disease (GVHD) prophylaxis for years. In fact, he and other investigators demonstrated the feasibility of this strategy using bone marrow grafts in a large multicenter trial, and he presented early findings from the current study at the 2024 annual meeting of the European Hematology Association (EHA), helping to lay the groundwork for this newest advance.

“We’re rewriting the rules of what’s possible for stem cell transplantation,” said Jimenez Jimenez. “For patients who once faced impossible odds, this research opens the door to hope.”

Breaking the Match Barrier

Imagine the immune system as a strict security team checking IDs at the entrance of the body. For decades, only donors with a nearly perfect genetic match—an eight-out-of-eight “ID badge”—were allowed through. This worked for some, but excluded many others, particularly individuals of non-European ancestry. Today, only about 29% of Black patients can find a fully matched donor in the registry, compared with 89% of non-Hispanic white patients.

The ACCESS study, sponsored by the National Marrow Donor Program (NMDP), may rewrite the rules. The research team’s newest findings [were] presented by Jimenez Jimenez Dec. 8 at the 2025 American Society of Hematology (ASH) annual meeting in Orlando.

Jimenez Jimenez and collaborators found that with a protective regimen using post-transplant cyclophosphamide (PTCy), patients can safely receive stem cell transplants from unrelated donors who are mismatched at two or more HLA markers. In other words, the “key” is no longer so rare.

“By expanding the criteria for donor matching, we’re making transplants accessible to nearly everyone, regardless of their ethnic background,” Jimenez Jimenez said. “This could be a major step forward for cancer care.”

What the Study Found

The ACCESS trial enrolled 268 adults with blood cancers. Participants received peripheral blood stem cell grafts from unrelated donors aged 35 or younger, with either seven of eight HLA markers matched (183 patients) or as few as four to six matches (85 patients).

At one year, survival rates were nearly neck and neck:

- 86% for those with four to six matched markers
- 79% for those with seven matched markers

Rates of graft-versus-host disease (GVHD)—the immune system’s version of friendly fire—were also comparable and relatively low. Acute, grade II–IV GVHD occurred in 34% of the more mismatched group and 39% of the less mismatched group at six months. Chronic, moderate-to-severe GVHD at one year was 8% and 11%, respectively.

Importantly, of the more mismatched group, 61% identify as other than non-Hispanic white.

Why It Matters

This research is more than a technical advance—it could be a lifeline. With PTCy-based GVHD prevention, doctors can consider donors with as few as four of eight HLA matches. The pool of

potential donors becomes an ocean, not a pond. For patients who once faced impossible odds, hope may no longer be out of reach.

“We’re seeing outcomes that rival those of fully matched donors, even in patients who previously had little chance of finding a match,” Jimenez Jimenez said. “That’s transformative for our field and for our patients.”

The findings also allow clinicians to prioritize other donor characteristics, such as younger age, which are known to improve transplant outcomes. The science is catching up to the needs of real people.

Think of cyclophosphamide as a peacekeeper, stepping in after the transplant to calm the immune system’s overzealous guards. By targeting the cells most likely to cause trouble, this drug prevents GVHD and helps the new cells settle in as part of the team. The ACCESS study confirms that this approach works even when the donor’s “ID” isn’t a perfect match.

“Cyclophosphamide has changed the landscape of transplantation and donor utilization trends” Jimenez Jimenez said. “It allows us to safely use donors who would have been considered unsuitable just a few years ago.”

While the results are positive, the study authors note that further research is needed. The ACCESS trial was not randomized, and ongoing studies are exploring optimal dosing and strategies for pediatric patients. Still, the data suggest that nearly 99% of patients could now have access to a suitable donor on international registries.

“We’re committed to refining these strategies and ensuring that every patient—regardless of background—has a chance at a cure,” Jimenez Jimenez said.

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