

'Mini transplant' patients' outcomes similar using related and unrelated donor cells

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People who undergo nonmyeloablative stem-cell transplants, or “mini transplants,” for leukemia, lymphoma and other blood cancers have comparable outcomes regardless of whether they receive tissue-matched stem cells from a related or unrelated donor, according to new findings by researchers at Fred Hutchinson Cancer Research Center.

The research by Marco Mielcarek, M.D., and colleagues in the Hutchinson Center’s Clinical Research Division appear in the December issue of the journal *Biology of Blood and Marrow Transplantation*.

“The main message for referring physicians is that if the patient is a candidate for a nonmyeloablative, or mini, transplant but does not have a suitable related donor, the transplant should not be delayed provided a matched unrelated donor is available,” said Mielcarek, the lead author of the paper.

This is a significant finding because historically, “standard” (myeloablative) stem-cell transplants from unrelated matched donors have been associated with increased risk of non-relapse mortality and decreased overall survival compared to transplants from matched related donors. Only 30 percent of patients with hematologic malignancies who might benefit from a stem-cell transplant have a matched related donor.

The combination of immunosuppressive drugs and the unique biology of the mini transplant may be the reasons behind the research results, Mielcarek said.

The Hutchinson Center's pioneering development 10 years ago of the mini transplant, a kinder, gentler treatment that doesn't require the intensive radiation and chemotherapy associated with standard stem-cell transplants, made the therapy available to thousands of older patients who were medically unable to withstand the rigors of traditional transplantation.

Such transplants do not require a patient's marrow be destroyed with high-dose radiation and chemotherapy prior to the infusion of donor cells. The technique involves minimal radiation and substantially reduced side effects. The procedure often can be performed in an outpatient clinic.

Mielcarek and colleagues conducted a retrospective study of 221 patients who had matched related donors and 184 patients who had matched unrelated donors. All of the patients underwent mini transplants at the Hutchinson Center between December 1997 and June 2006. After adjusting for confounding factors such as comorbidities, relapse risk, patient age, stem-cell source, preparative regimen, and sex mismatch of donor and recipient, researchers found no statistically significant differences between patients who received unrelated and related matched donor cells in terms of rates of non-relapse mortality, relapse-related or overall mortality. Additionally, overall rates of severe acute and extensive chronic graft-versus-host disease between the two groups were not significantly different.

The preparative regimen for and the immunobiology of nonmyeloablative transplantation may account for the similar outcomes, according to the study. Patients who undergo mini transplants receive potent pre- and post-transplant immunosuppression drugs. This allows a major reduction in pre-transplant chemotherapy without compromising engraftment of the donor cells.

The research paper, “Comparable Outcomes after Nonmyeloablative Hematopoietic Cell Transplantation with Unrelated and Related Donors” by Mielcarek and colleagues is available at the journal’s Web site, www.bbmt.org/current .

Source: Fred Hutchinson Cancer Research Center

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