

Similar survival for leukemia patients receiving transplantations from related vs. unrelated donors

Hematopoietic (blood) stem cell transplantation can cure many diseases. About 70% of patients who need a transplant do not have a suitable donor in their family. In these cases, cells from an unrelated donor can be used. A close genetic match between patient and donor cells reduces the risk that the patient's immune cells will attack the donor cells or that the donor's immune cells will attack the patient.

Physicians use human leukocyte antigen (HLA) typing to match donor and recipient. HLAs are proteins found on most cells in your body. The immune system uses these proteins to recognize which cells belong in your body and which do not. A close HLA match improves the chances of a successful transplantation. The 8 HLA proteins used for minimum matching requirements are two A, two B, two C, and two DRB1 proteins.

This study compared outcomes after transplantation in 2,223 adults with leukemia who were transplanted between 2002 and 2006. They compared two groups. One group had matched related donors, and the other had matched unrelated donors. The results showed that the group who had matched related donors had less risk of injury from the donor's immune cells than those who had matched unrelated donors. Survival rates were similar for fully matched unrelated donors and matched related donors. Early mortality rates after transplantation were higher with unrelated donors who had a single HLA mismatch (7 out of 8 HLA markers) versus those with matched related donors. Survival rates were similar beyond 6 months after transplantation.

The results suggest that patients with leukemia who get a transplant from a well matched unrelated donor or from an unrelated donor with a single mismatch should have similar survival to patients who have a related donor.