

Reduced Intensity Allogeneic Stem Cell Transplantation

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INTRODUCTION

This type of transplantation involves using less-intense conditioning treatment to prepare for the transplant as compared to standard allogeneic transplantation. With a standard allogeneic transplant, the conditioning regimen destroys most of the cancer cells. However, a reduced-intensity allogeneic transplant relies on the donor immune cells to fight the disease. Reduced-intensity allogeneic transplants (sometimes called “nonmyeloablative transplants”) may be an option for certain patients who are Blood and Marrow Stem Cell Transplantation I page 9 older, who have organ complications or who are otherwise not healthy or strong enough to undergo standard allogeneic transplantation. However, reduced-intensity allogeneic transplants do carry many of the same risks as standard allogeneic transplants, but like standard-intensity allogeneic transplants, also provide benefit via the GVD effect to help prevent disease relapse. Research study results to date indicate that reduced-intensity allogeneic transplants are more effective as a treatment for some types and/or stages of blood cancer. Research indicates that reduced-intensity allogeneic transplants may be effective in treating certain patients with chronic myeloid leukemia (CML), acute myeloid leukemia (AML), non-Hodgkin lymphoma (NHL), chronic lymphocytic leukemia (CLL), or myelodysplastic syndromes (MDS). Your doctor will discuss whether a reduced-intensity allogeneic transplant is an option for you. The conditioning regimen for a reduced-intensity allogeneic transplant does not destroy many cancer cells. However, it suppresses or weakens the patient’s immune system so that it cannot attack the donor cells. The cells for a reduced-intensity transplant can come from a family member, an unrelated donor or, less often, a cord blood unit. The donor cells grow a new immune system and the new immune cells destroy the cancer cells. This term is used to describe an allogeneic transplant when the donor and recipient are twins with identical genetic makeup and the same tissue type. With this kind of transplantation, donor cells are not

rejected and the recipient’s tissues are not attacked by the donor’s immune cells. No treatments are needed to prevent graft rejection or GVHD. However, no beneficial GVD effect is expected either. Furthermore, as with autologous transplants, relapse of the patient’s disease is more common than with other types of donors. Long-term remission is achieved in some of these patients due to the conditioning regimen effects and the infusion of normal stem cells. Transplant doctors use stem cell transplantation so they can give large doses of chemotherapy or radiation therapy to increase the chance of eliminating disease in the marrow and then restoring normal blood cell production. The infusion of stem cells from a closely matched donor, whether a sibling or unrelated donor, will begin to restore marrow function and blood cell production and allow recovery from the intensive treatment. As noted earlier, some transplants rely on immune cells from the graft (donor infusion) to suppress the underlying disease. After several decades of research, discovery and clinical trials, allogeneic stem cell transplantation is now commonly used to successfully cure some patients who are at high risk of relapse, who do not respond fully to treatment, or who relapse after prior successful treatment. Autologous stem cells (obtained from the patient’s own blood or marrow) can also be used in some circumstances. The success of a transplant depends on appropriate timing, compared with other treatments. For patients who could benefit from a transplant, earlier treatment (rather than delayed for multiple chemotherapy or drug therapy treatments) often improves the likelihood of success and survival. Since blood and marrow are both good sources of stem cells for transplantation, the term “stem cell transplantation” has replaced “bone marrow transplantation” as the general term for this procedure. The abbreviation “BMT” is now used to represent blood and marrow transplantation. There are many terms for transplantation, including bone marrow transplantation (BMT), marrow or cord blood transplantation or hematopoietic cell transplantation (HCT). These are all different names for the same procedure.

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