

## Mini Allogeneic Transplant Not Superior to Subsequent Autologous Stem Cell Transplant in High-Risk M

### Mini Allogeneic Transplant Not Superior to Subsequent Autologous Stem Cell Transplant in High-Risk Multiple Myeloma After Initial Autologous Stem Cell Transplant

According to an article recently published in the journal *Blood*, a “mini” allogeneic stem cell transplant does not provide a benefit compared to an autologous stem cell transplant in patients with high-risk multiple myeloma who have already undergone an autologous stem cell transplant.

Multiple myeloma is a cancer of the blood that affects the plasma cells. Plasma cells are an important part of the immune system; they produce antibodies to help fight infection and disease. Multiple Myeloma is characterized by an excess production of abnormal plasma cells. Symptoms include increased risk of bacterial infections and impaired immune responses.

Myeloma may also damage the kidneys and cause osteoporosis, anemia, and an elevated blood calcium level.

In a stem cell transplant (an important part of myeloma treatment), high doses of therapy are used to kill more cancer cells than conventional doses. Unfortunately, the higher doses tend to destroy critical hematopoietic stem cells (immature blood cells). These stem cells mature into the following: red blood cells, which transport oxygen and nutrients to tissues in the body; white blood cells, which help the body fight infection; and platelets, which aid the blood in clotting. Low levels of hematopoietic stem cells caused by high-dose treatment can result in life-threatening conditions.

There are two general types of stem cell transplants: an autologous transplant and an allogeneic transplant. During an autologous transplant, the patient’s own hematopoietic stem cells are collected prior to therapy, frozen, and then re-infused following high-dose treatment. During an allogeneic transplant, the stem cells are collected from a donor and infused into the patient following therapy.

Unfortunately, a significant portion of patients still experience a cancer recurrence following treatment with high-dose therapy and stem cell transplantation. Researchers continue to evaluate ways to reduce these recurrences in order to improve overall survival for patients with multiple myeloma. The use of two sequential stem cell transplants is one approach under evaluation.

Since the high doses of therapy are often intolerable for some patients, physicians have started to use “mini” or “non-myeloablative” allogeneic stem cell transplants. During a mini transplant, the high doses of therapy are not used; instead, the donor stem cells are meant to provide anticancer activity—the donor stem cells often recognize the patient’s cancer cells as foreign and mount an attack against them. Based on this activity, physicians are evaluating the use of mini-allogeneic stem cell transplants following an autologous stem cell transplant to reduce the risk of recurrences.

Researchers from Europe recently conducted two clinical trials to evaluate different treatment methods in patients with multiple myeloma who were at a high risk of developing a cancer recurrence.

The two trials were initiated in 1999 and included 286 patients. Sixty-five patients were treated with an autologous stem cell transplant followed by a mini-allogeneic stem cell transplant, and 219 received two sequential autologous stem cell transplants. The outcomes between the two groups of patients were directly compared.

- At a median follow-up of two years, event-free survival (no recurrences, cancer progression, or death) was similar between the two groups of patients (35 months for those treated with an autologous and mini transplant compared to 32 months for two autologous transplants).

- For patients undergoing full treatment in both groups, overall survival tended to favor those who underwent two autologous transplants (47 months) compared to those who received an autologous transplant followed by a mini transplant (35 months).

The researchers concluded that it appears that an autologous stem cell transplant followed by a mini-allogeneic stem cell transplant does not provide a benefit compared to two sequential autologous stem cell transplants in patients with high-risk multiple myeloma. However, further clinical trials directly comparing these treatment approaches are necessary to truly determine outcomes and to determine whether certain patients will benefit from one approach over another.

It is important for patients with multiple myeloma to speak with their physician regarding their individual risks and benefits of all treatment options.

Reference: Garban F, Attal M, Michallet M, et al. Prospective Comparison of Autologous Stem Cell Transplantation Followed by Dose-Reduced Allograft (IFM99-03 trial) with Tandem Autologous Stem Cell Transplantation (IFM99-04 trial) in High-Risk de Novo Multiple Myeloma. *Blood*. 2006; 107: 3474-3480.