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Donor stem cell transplantation associated with survival benefit for patients with leukemia

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An analysis of previous studies indicates that allogeneic stem cell transplantation (SCT) (stem cells from a compatible donor) is associated with significant overall and relapse-free survival benefit among adult patients with intermediate- and poor-risk but not good-risk acute myeloid leukemia in first complete remission, compared with nonallogeneic SCT therapies, according to an article in the June 10 issue of *JAMA*.

The optimal curative treatment of acute myeloid leukemia (AML) in first complete remission (CR1) is uncertain. While more than 70 percent of younger adult patients with newly diagnosed AML will enter a CR1 after initial (induction) chemotherapy, a substantial number subsequently experience disease relapse, according to background information in the article. "Allogeneic SCT after myeloablative conditioning [high-dose radiation and/or chemotherapy given to destroy normal and cancerous cells in the bone marrow prior to infusion of donor stem cells] is a curative treatment option for younger patients with AML in CR1. However, concerns regarding allogeneic SCT-related toxicity, and questions regarding its benefit, limit its use for patients who have attained an initial remission," the authors write.

John Koreth, M.B.B.S., D.Phil., of the Dana Farber Cancer Institute, Boston, and colleagues conducted a meta-analysis to quantify relapse-free survival (RFS) and overall survival benefit of allogeneic SCT for

AML in CR1 overall, and also for good-, intermediate-, and poor-risk AML. The researchers conducted a search for articles on trials evaluating allogeneic SCT vs. nonallogeneic SCT therapies (autologous [donor and recipient are the same person] SCT, consolidation chemotherapy, or both) for AML in CR1. The researchers identified 24 trials that met criteria for inclusion in the analysis, which included 6,007 patients (5,951 patients in RFS analyses and 5,606 patients in overall survival analyses); 3,638 patients were analyzed by cytogenetic (abnormalities in the composition of the chromosomes) risk (547, 2,499, and 592 with good-, intermediate-, and poor-risk AML, respectively).

"Our primary finding is that the totality of the prospective trial data indicates statistically significant RFS and overall survival benefit with allogeneic SCT for adult AML in CR1. This conclusion is supported by a variety of sensitivity and subgroup analyses …. Additionally, our analyses indicate that allogeneic SCT benefit likely varies by AML cytogenetic risk. We document significant RFS and overall survival benefit for allogeneic SCT in intermediate- and poor-risk AML, and a lack of significant RFS or overall survival benefit for good-risk AML," the authors write.

"While enrollment in therapeutic trials is to be encouraged, our findings provide evidence to guide clinical decision making and future trial design."

Source: JAMA and Archives Journals (news : web)