Medical Xpress

Depletion of naive T cells from stem cell grafts limits chronic graft-versus host disease

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Stem cell transplantation is used to treat hematologic malignancies, such as leukemia. Patients that receive donor cells are at risk of developing graft-versus host disease (GVHD). This potentially fatal complication results when naive T cells generated from the graft promote an immune response that attacks the recipient's tissues. Prophylactic treatment with immunosuppressive drugs is currently used to limit GVHD but does not reliably prevent disease. In mouse models, depletion of naive T cells from the stem cell graft prior to transplant reduces the occurrence and severity of GVHD.

A new study in the *Journal of Clinical Investigation* evaluates GVHD in a small set of patients with leukemia that received stem cell grafts that had been depleted of naïve T cells prior to transplantation. Marie Bleakley and colleagues at the Fred Hutchinson Cancer Research Center showed that reduction of naïve T cells in the donor graft markedly reduces the occurrence of chronic GVHD disease in patients. There was no reduction in the overall rate of acute GVHD occurrence in these patients. However, acute GVHD in these recipients was generally responsive to corticosteroid therapy.

The results of this study support depletion of naïve T cells from stem cell grafts prior to transplantation as a potential treatment option to limit chronic GVHD in patients.

More information: Outcomes of acute leukemia patients transplanted with naive T cell depleted stem cell grafts, *J Clin Invest.* 2015. DOI:

10.1172/JCI81229.