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HEMATOLOGY

Preventing relapse

Allogeneic hematopoietic stem cell transplantation (HSCT) has become a successful therapy for many hematological cancers that do not respond to chemotherapy. Although it remains a risky procedure, most of the deaths after HSCT in the past two decades are attributable to recurrence of the malignancy rather than to graft-versus-host disease (GvHD). However, to minimize the effects of chronic or acute GvHD, patients are generally treated with systemic immunosuppressive therapy (IST). This may reduce the activity of the donor cells against the host, but also against the leukemia, which can result in relapse. "We have known for many years that GvHD is associated with a reduced risk of recurrent malignancy after HSCT," explains Paul Martin, senior researcher of the study, "recent changes in the criteria for diagnosis of chronic GvHD led us to ask whether acute and chronic GvHD differed in their influence on risk of recurrence." In addition, they also sought to evaluate how IST may influence the risk of recurrent leukemia.

To that end, the researchers retrospectively analyzed 2,656 patients with different hematological malignancies. In patients with either chronic or acute GvHD, relapse rates declined gradually for 3 years after transplantation and removing IST did not have any effect on these rates. Although relapse rates were not statistically different in patients without GvHD compared with patients with chronic or acute GvHD during the first 18 months, the risk of relapse during this time frame was dramatically lowered when IST was withdrawn in patients who did not have GvHD. Nevertheless, "the risk of recurrent malignancy remains considerably higher thereafter in these patients than in those who had acute or chronic GvHD," clarifies Martin.

> "Does this mean that immunosuppressive therapy after HSCT is no longer needed?"

Does this mean that IST after HSCT is no longer needed? "Previous studies have shown that virtually all patients had severe GvHD when no IST was given. [...] We are considering whether to withdraw IST earlier than usual in patients who have a high risk of recurrent malignancy and no history of GvHD." For patients with GvHD, there might be other approaches. "The data suggest that the best overall results after HSCT might be attained by methods that prevent the morbidity associated with chronic GvHD and the mortality associated with severe acute GvHD, while allowing the graft-versus-leukemia effects associated with mild acute GvHD," concludes Martin.

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Original article Inamoto Y. *et al.* Influence of immunosuppressive treatment on risk of recurrent malignancy after allogeneic hematopoietic cell transplantation. *Blood*, doi:10.1182/blood-2011-01-330217