Circulating tumor DNA indicates risk of relapse after transplant in DLBCL patients

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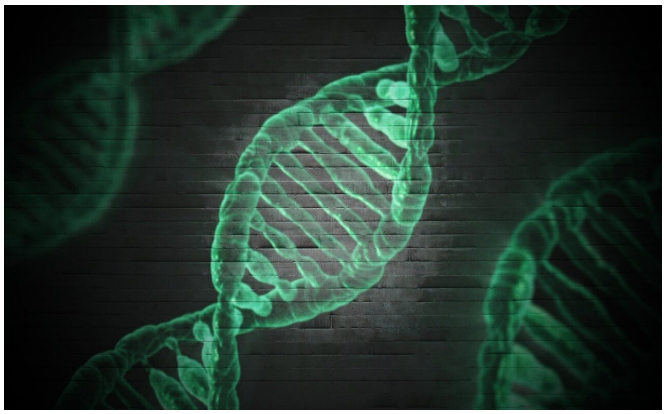

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Many patients with diffuse large B-cell lymphoma (DLBCL) can be cured by a transplant using their own blood-forming stem cells, but as many as half eventually relapse. New research led by Dana-Farber Cancer Institute scientists suggests that patients whose blood or stem cell samples harbor tumor DNA are likely to relapse.

The findings, presented today at the virtual 62nd American Society of Hematology (ASH) Annual Meeting, indicate that testing for tumor DNA within a patient's stem cells or blood can be helpful for patients with DLBCL, regardless of whether they're eligible for a transplant or have already undergone one. The results could support studies of alternative treatments, such as CAR T cell therapy, in clinical trials for patients whose stem cells test positive for tumor DNA. Patients who test positive after a transplant may benefit from prompt interventions to guard against relapse.

"Testing for tumor DNA is a powerful technique that can give us information that can be helpful in terms of prognosis and that may be a platform in the future for further personalizing therapies to minimize the risk of relapse for patients with lymphoma," said Dana-Farber's Reid Merryman, MD, the lead author of the study.

DLBCL is the most common type of non-Hodgkin lymphoma in the United States, with more than 18,000 new diagnoses each year. It begins in white blood cells called B cells that, among other roles, make antibodies to fight infections.

Researchers hypothesized that DNA shed from tumor cells into the bloodstream could be an indicator of risk of relapse. To determine if that's the case, they tested for tumor DNA in blood and tissue samples from patients both before and after transplant and compared relapse rates among those who tested positive and those who did not.

The study included 154 patients with DLBCL who had undergone an autologous stem cell transplant (a transplant of their own cells). Researchers analyzed stem cell samples left over from the transplants and blood samples collected after transplant.

They found that patients who had evidence of circulating tumor DNA within their stem cell samples often fared poorly after transplant. Five years after undergoing a transplant, only 13% of them were still in remission, the rest having relapsed.

"This suggests that patients identified prior to transplant as having evidence of circulating tumor DNA should be treated with therapies other than transplant," Merryman stated. "This is an important area to explore as part of a future clinical trial."

Similarly, the presence of tumor DNA in blood samples collected after transplant often indicated a poor prognosis. Of the 20 patients found to have tumor DNA in their blood, 17 went on to relapse. On average, the DNA was detected about two months before the relapse occurred. "This could

provide us with some lead time for interventions that may be able to pre-empt relapse from occurring," Merryman remarked. "As in the case of tumor DNA found prior to transplant, the potential value of such interventions needs to be explored in clinical trials."

More information: Merryman will present findings on this study during Session 627, Abstract 531 on Monday, Dec. 7 at 10:15 a.m. EST.

Provided by Dana-Farber Cancer Institute