

Trial participation among factors influencing risk of relapse in AYA leukemia patients

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Adolescent and young adult (AYA) patients with acute lymphoblastic leukemia (ALL) were significantly more likely to relapse than pediatric ALL patients, and factors including lower clinical trial enrollment and shorter duration of therapy were associated with relapse.

The study is published in the *Cancer Epidemiology, Biomarkers & Prevention*, by Julie A. Wolfson, MD, MSHS, assistant professor and member of the Institute for Cancer Outcomes and Survivorship at the School of Medicine, University of Alabama at Birmingham.

While pediatric cancer [patients](#) have experienced dramatic improvement in survival rates, AYA patients have not seen equal improvement, Wolfson explained.

To address this disparity, the National Cancer Institute (NCI) created a special designation for the AYA population and has supported research investigating why these patients often have worse cancer outcomes.

"Patients diagnosed between the ages of 15 and 39 simply have not seen the same improvement as those in other age groups. In this study, we examined factors related to health care delivery and treatment to increase our understanding of why they experience poorer outcomes," Wolfson said.

The researchers assembled a retrospective cohort of ALL patients diagnosed between ages 1 and 39 and treated at City of Hope, an NCI-

designated Comprehensive Cancer Center, between 1990 and 2010. In all, 91 patients were children (age 1 to 14) and 93 were AYA (age 15 to 39).

The researchers established variables including demographics, insurance status, participation in clinical trials, duration of treatment, and whether the patients had been treated with "pediatric-inspired" or "adult-inspired" regimens. Wolfson explained that whether an AYA patient is treated more like a pediatric patient or more like an adult is often simply determined by the hospital where they receive care. Using Kaplan-Meier survival analysis, the researchers calculated the risk of [relapse](#).

As previous research had indicated, children with ALL had superior relapse-free survival compared with AYAs. Five years after diagnosis, 74 percent of children had not relapsed or died, compared with 29 percent of younger AYAs (ages 15 to 21) and 32 percent of older AYAs (ages 22-39).

Other key findings:

- Forty-eight percent of AYAs suffered a relapse while on therapy, compared with 17 percent of children. Among these patients, Wolfson said the strongest predictors of relapse were race (non-white patients were twice as likely to relapse) and enrollment in clinical trials (those who were not enrolled were 2.6 times more likely to relapse.)
- After completion of therapy, 47 percent of AYAs suffered a relapse, compared with 13 percent of children. Among these patients, Wolfson said the most significant factor was the duration of treatment, both in the consolidation and maintenance phases. For each additional month of maintenance therapy, there was a 30 percent lower risk of relapse.

Wolfson said the study adds to evidence that AYA patients should be

encouraged to participate in clinical trials. She explained that many [trials](#) are designed for either pediatric patients or adult patients, and the cancer center an AYA patient chooses may not have an appropriate clinical trial. Ideally, an AYA patient diagnosed with ALL should be counseled on whether any clinical trial is available, whether at the hospital where they first seek treatment or at another center.

Wolfson added that clinical trial participation confers multiple benefits. "It is possible that patients sometimes benefit from being enrolled on a clinical trial not only because the therapy itself is providing a benefit, but also because it is a protocolized, regulated approach that requires patients to stay on course and not take breaks," she said.

Wolfson said a broad range of factors may affect the duration of treatment. For example, the AYA population is more likely to be uninsured or underinsured, which can make them more likely to stop treatment or miss appointments.

Wolfson said research is ongoing to identify ways to get more AYA patients into [clinical trials](#). She said the NCI has been working on changing age limits in studies, for example, lowering age ranges of adult studies and raising age limits on pediatric studies so that AYAs would be more likely to match study criteria.

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