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Young adults with ALL benefit from therapies developed for children

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Results from a large, prospective clinical trial add to mounting evidence that adolescent and young adult patients—aged 16 to 39 with acute lymphoblastic leukemia (ALL)—tend to fare better when treated with high-intensity pediatric protocols than previous patients who were treated with standard adult regimens.

The intergroup trial, presented at the 56th annual meeting of the American Society of Hematology, enrolled 296 adolescent and young adult patients with ALL. All participants were treated by adult hematologists-oncologists on a pediatric protocol, including four intensive courses of chemotherapy. After two years of follow up, 78 percent of the patients achieved overall survival and 66 percent of patients maintained event-free survival—time after treatment without recurrence, progression or death.

Wendy Stock, MD, professor of medicine at the University of Chicago and the study's main author, said the 66-percent event-free survival rate was a "significant improvement" over previous studies for this age range, which showed an event-free survival rate of 34 percent.

"We showed that adolescents and young adults could tolerate an intensive pediatric regimen. The protocol resulted in low treatment-related mortality, less than two percent, and improved both disease-free and overall survival," Stock said. "Our results are important because most adolescent and young adult patients with ALL are still treated with lower-intensity adult regimens and are not enrolled on clinical trials."

Still, she cautioned that these findings need to be confirmed with longer follow-up.

The evidence for better results from higher-intensity therapy dates back to 2000, when Stock and UChicago pediatric oncologist James Nachman examined ALL trials conducted over the last 10 years by two cancer cooperative groups, one pediatric and one adult.

They found a stunning difference. ALL patients ages 16 to 21 who enrolled in pediatric trials had a progression-free survival rate of 68 percent. Patients ages 16 to 21 who enrolled in the adult trials had a progression-free survival rate of 34 percent, about the same as patients 22-39 years of age. Retrospective studies from France, the United Kingdom and the Netherlands had similar results. These data led the U.S. cooperative groups to perform the prospective C10403 study.

Biological disease factors other than the treatment also play a role, the researchers point out. High initial white blood cell counts, or the presence of minimal residual disease after the first month of therapy, were linked to poor outcomes. Two-year event-free survival for patients with a leukemia-specific molecular genetic profile indicating aggressive disease was 52 percent compared to 81 percent for those who lacked the genetic alteration.

"With these new insights, we can now focus future clinical trial research to build upon the C10403 regimen and evaluate new targeted agents to eradicate minimal residual disease in young adults with ALL and further improve their long-term survival," Stock said.

Provided by University of Chicago Medical Center

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