

Young adults with ALL have encouraging survival with pediatric regimen

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Using a pediatric chemotherapy regimen to treat young adults with acute lymphoblastic leukemia (ALL) significantly improved their outcomes compared to what has historically been achieved with 'adult' treatment protocols, report Dana-Farber Cancer Institute scientists.

Overall survival and disease-free survival at three years exceeded 70 percent in patients between 18 and 50 years old, according to results of a multi-center phase 2 trial presented at the 57th American Society of Hematology (ASH) Annual Meeting and Exposition in Orlando.

"This is better than the 40 percent historically seen in this patient group," said Richard Stone, MD, senior author of the study abstract, who added that the median survival rate had not yet been reached. Daniel DeAngelo, MD, PhD, of Dana-Farber is the first author and leader of the study. This was a single-arm trial with no control group.

ALL is most common in early childhood and most can be successfully treated with chemotherapy. About 1,000 new cases are diagnosed annually in adults, who have a poorer prognosis; most of the deaths from ALL occur in older patients.

DeAngelo and others at Dana-Farber and elsewhere have observed that young adults treated by pediatric oncologists for ALL fared better than those who underwent standard adult regimens, which include more drugs that suppress bone marrow function. As a result, pediatric regimens have been tried in young adult patients, yielding improved outcomes, said

Stone. "I've put many patients on this regimen, and they have been doing very well."

Earlier in 2015, DeAngelo and Stone reported in *Leukemia* that a pediatric drug combination that included a native *E.coli*→ asparaginase compound achieved a four-year disease-free and overall survival rate of 69 percent.

The current successor trial was carried out to determine if the same regimen but using a safer and longer lasting compound, pegylated asparaginase, could be feasibly administered to adults. In this trial, 110 high-risk young adult ALL patients received the pediatric regimen, given initially to induce a remission followed—in those who achieved remission—by two years of consolidation and continuation therapy. They also received additional chemotherapy and radiation designed to kill any leukemia cells in the brain and central nervous system.

The survival gains came at a cost of toxicity resulting in two deaths, pancreatitis in four patients, allergic reactions, infections, and blood clots. "The dose and schedule of pegylated asparaginase that is well-tolerated in adults is lower than can be used in pediatric [patients](#)," the authors cautioned.

Nevertheless, they concluded that the regimen is "tolerable in [young adults](#) with ALL and represent a major therapeutic advance."

Provided by Dana-Farber Cancer Institute

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