

Pediatric regime of chemotherapy proves more effective for young adults

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Acute lymphoblastic leukemia (ALL), usually found in pediatric patients, is far more rare and deadly in adolescent and adult patients. According to the National Marrow Donor Program, child ALL patients have a higher than 80 percent remission rate, while the recovery rate for adults stands at only 40 percent.

In current practice, pediatric and young adult ALL [patients](#) undergo different treatment regimes. Children aged 0-15 years are typically given more aggressive chemotherapy, while young adults, defined as people between 16 and 39 years of age, are treated with a round of chemotherapy followed by a bone marrow transplant. But a new study has revealed that it may be time to rethink this strategy, says Dr. Ron Ram of Tel Aviv University's Sackler Faculty of Medicine and the Davidoff [Cancer Center](#) at the Rabin Medical Center.

Dr. Ram and his fellow researchers have determined that a pediatric treatment regime for young [adult patients](#) with ALL improves their chance of long-term survival, and decreases the mortality rate itself by 40% — all without the additional complications of a [bone marrow transplant](#). Their findings have been published in the *American Journal of Hematology*.

Avoiding the transplant list

There are a number of reasons for the differing [treatment regimes](#),

including physical stress, psychological preparedness, and prevalence of the disease. Pediatric oncologists, who see dozens of cases of ALL a month, treat their patients with aggressive chemotherapy because there is a consensus that young children can better cope with the treatment — their heart, liver, and lungs are better able to repair themselves after exposure to the toxic cancer-fighting drugs, and they have better psychological support systems to deal with their situation.

Adult oncologists, on the other hand, proceed with more caution, believing that the older body has less ability to heal itself and that adults are not as psychologically well-adapted for the hardships of intensive chemotherapy. In addition, the smaller number of young and mature adult ALL patients means that fewer studies and clinical trials have been done on adolescents and adults with the disease, so less information is available.

For their study, Dr. Ram and his fellow researchers conducted a systematic review of 11 comparative studies comparing the outcomes of 2,489 individuals aged 16-39. They completed an analysis to determine how the young adult regime compared to the pediatric treatment for this age group. They discovered that at three years, mortality was significantly lower when the patient was treated with the pediatric regime than with the adult chemotherapy/transplant combination, with a remission rate closer to that in children. Relapse rates were also significantly lower.

"The long-term survival of these young adults increased significantly when following the pediatric treatment," concludes Dr. Ram. The results disproved the assumption that with the more aggressive chemotherapy, young adult patients would have higher toxicity rates. "There was a worry that the patients might suffer or even die from the toxicity of the treatment, but toxicity rates remained the same. With the pediatric treatment, patients were more frequently in remission and had prolonged

survival without bone marrow transplantation — which itself is hard on the body."

More trials needed

Though the comparative studies have pointed researchers in the right direction, Dr. Ram says that this study is limited by a lack of randomized controlled trials, which could give more insight into whether the pediatric regime should be adopted as standard for young adult patients.

Still, the results are persuasive, leading to the conclusion that patients in this age group can be treated as [pediatric patients](#) in terms of the level of chemotherapy they can handle. "For a 16-20 year old, I would push them towards a pediatric regime," Dr. Ram says.

Provided by Tel Aviv University

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