

Survival of children with acute lymphatic leukemia has increased to 94%, study finds

July 17 2023



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The five-year survival of all children with acute lymphatic leukemia (ALL) has continued to increase to 94%. This is evident from a study of 800 Dutch children. Within the study, modified treatment protocols for

four subgroups were examined.

The modifications were found to have positive effects on survival and quality of life. For example, the risk of disease recurrence became as much as three times smaller for children with an aggressive form of [leukemia](#). Prof. Dr. Rob Pieters says, "The five-year survival rate for children with acute lymphatic leukemia has increased dramatically since the 1960s, from zero to 94%, but the last steps are the most difficult."

Acute lymphatic leukemia is the most common form of childhood cancer in the Netherlands. Every year, about 110 children are diagnosed with this form of cancer. The prognosis is good for many children, but not yet for every child. To improve [survival rates](#) and quality of life for all children with leukemia, the treatment protocol is constantly being adapted over the years on the basis of new scientific insights.

The study results of the ALL-11 treatment protocol, led by researchers at the Princess Máxima Center, were published today in the journal *Journal of Clinical Oncology*.

Three times lower risk of return

Between April 2012 and July 2020, more than 800 children in the Netherlands were treated according to this protocol. The study looked at the effect of modified treatment in specific groups of children with leukemia, including those with a so-called Ikaros abnormality. Prof. Dr. Rob Pieters, pediatric oncologist and medical director of the Princess Máxima Center, led the [clinical study](#). He says, "There is broad interest worldwide in this research, because it was still unknown how to improve therapy for children with Ikaros leukemia."

Children with an Ikaros abnormality in the DNA of their leukemia cells are more likely to have their disease return after treatment. In this study,

these children received an additional year of 'maintenance phase' chemotherapy on top of the first two years of treatment. This modification led to a three times lower risk of the cancer returning: it only happened in 9% of them, compared to 26% of children in the previous [treatment protocol](#).

Less severe treatment proves safe

In the ALL-11 protocol, doctors and researchers also looked at the effect of less intensive treatment for three other groups of children. These included children with a DNA abnormality in their leukemia cells that is associated with a very high cure rate, and children with Down syndrome who suffer a lot of side effects from therapy.

These children were given lower amounts of anthracyclines, a particular type of chemotherapy that increases the risk of heart damage and infections. The modification turned out to be a good choice: the children had the same or even better survival rate while their quality of life improved due to a lower risk of infections and less risk of heart damage.

Prof. Dr. Rob Pieters says, "The five-year survival rate for children with [acute lymphoblastic leukemia](#) has increased tremendously since the 1960s, from zero to 94%, but the last steps are the hardest. We are now one step closer to curing all children with ALL. We have also been able to remove a drug that gives risk of heart damage largely from the treatment of children with less aggressive disease. So the latest results for [children](#) with leukemia fit exactly with our mission: more cure, with fewer side effects."

More information: Improved outcome for acute lymphoblastic leukemia by prolonging therapy for IKZF1 deletion and decreasing therapy for other risk groups, *Journal of Clinical Oncology* (2023). [DOI: 10.1200/JCO.22.02705](https://doi.org/10.1200/JCO.22.02705)

Provided by Princess Máxima Center for Pediatric Oncology

Citation: Survival of children with acute lymphatic leukemia has increased to 94%, study finds (2023, July 17) retrieved 28 April 2024 from <https://medicalxpress.com/news/2023-07-survival-children-acute-lymphatic-leukemia.html>

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