

Acute Lymphoblastic Leukemia (ALL)

ALL, one of the four main types of leukemia, is a blood cancer that starts in bone marrow and moves into the blood quickly. ALL is an aggressive type of leukemia; without treatment, most patients with acute leukemia would live only a few months.¹



FACTS AND FIGURES

- Estimated that by 2020, nearly **412,000** people worldwide will be diagnosed with some type of leukemia.²
- ALL accounts for **approximately 12%** of all leukemia cases worldwide.³
- For adult patients with relapsed or refractory ALL, the five-year overall survival rate is **less than 10%**.^{4,5}



RISK FACTORS

- The risk for developing ALL is highest in children younger than 5 years of age. Overall, about **4 of every 10 cases** of ALL are in adults.¹
- Possible risk factors for ALL include:¹
 - ◊ Being male
 - ◊ Being older than 70⁶
 - ◊ Being Caucasian
 - ◊ Previously treated with chemotherapy or radiation therapy
 - ◊ High dose radiation exposure (e.g., survivor of an atomic bomb blast or nuclear reactor accident)
 - ◊ Having certain genetic disorders, such as Down syndrome



DIAGNOSIS

- A diagnosis of ALL is usually made through blood and bone marrow tests, based on information on blood cell counts, blood chemistry studies and bone marrow sampling.¹
- Patients with ALL often have several non-specific symptoms, including **weight loss, fever, night sweats, fatigue and loss of appetite**.¹



PROGNOSIS & TREATMENT

- Prognosis for ALL remains poor. While about 80-90% of adult patients will have complete remissions at some point during treatment, about **half will relapse**, so the overall cure rate is around 40%.¹
- Long-term chemotherapy and various combination chemotherapy regimens are widely used to treat first line ALL. Additional treatment options include targeted therapies, T-cell therapies and tyrosine kinase inhibitors (TKIs).^{1,5}
- Because leukemia cells spread widely throughout the bone marrow and to many other organs, it is not possible to cure ALL with surgery.¹
- For patients who do not respond to chemotherapy and have an advanced case of ALL, **stem cell transplant may be the best chance for a cure**.⁷
 - ◊ Additional therapeutic options are needed to help patients achieve hematologic remission, which may help them become eligible for transplant.⁷

REFERENCES

1. American Cancer Society. Detailed guide – Acute lymphocytic leukemia. Available at: <http://www.cancer.org/acs/groups/cid/documents/webcontent/003109-pdf.pdf>. Accessed June 2018.
2. GLOBOCAN Online Analysis/Prediction. Available at: http://globocan.iarc.fr/old/burden.asp?selection_pop=224900&Text-p=World&selection_cancer=12280&Text%20c=Leukemia&pYear=8&type=0&window=1&submit=%C2%A0Execute. Accessed on June 2018.
3. Redaelli, A., et al, A systematic literature review of the clinical and epidemiological burden of acute lymphoblastic leukaemia (ALL). *European Journal of Cancer Care*, 2005 14: 53–62. doi: 10.1111/j.1365-2354.2005.00513.x
4. Fielding A. et al. Outcome of 609 adults after relapse of acute lymphoblastic leukemia (ALL); an MRC UKALL12/ECOG 2993 study. *Blood*. 2006; 944-950.
5. National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: acute lymphoblastic leukemia. Available at: https://www.nccn.org/professionals/physician_gls/pdf/all.pdf. Accessed June 2018.
6. National Cancer Institute. Adult acute lymphoblastic leukemia treatment - patient version. Available at: <https://www.cancer.gov/types/leukemia/patient/adult-all-treatment-pdq>. Accessed June 2018.
7. Leukemia and Lymphoma Society. Stem cell transplantation. Available at: <http://www.lls.org/leukemia/acute-lymphoblastic-leukemia/treatment/stem-cell-transplantation>. Accessed June 2018.