



# Acute Lymphoblastic Leukemia in Children

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- Acute lymphoblastic leukemia (ALL), the most common malignancy in children, accounts for what percentage of all cancer diagnosed in children who are younger than age 15?
  - 10%
  - 15%
  - 25%
  - 40%
- Bobby Sullivan recently was diagnosed with ALL. After a family conference with the physician, Bobby's parents approach the nurse and ask for clarification on Bobby's long-term survival. Which of the following age groups has the most favorable prognosis?
  - 1–4 years
  - 5–10 years
  - 11–14 years
  - 15–19 years
- Later, Bobby's parents approach the nurse and ask how their seven-year-old child acquired leukemia. Which of the following causes would be the most appropriate response?
  - Exposure to a rare virus
  - Environmental influences
  - Mutations in their child's cells
  - Radiation exposure
- A four-year-old boy is admitted to the pediatric oncology unit for evaluation of a possible diagnosis of ALL. In addition to a bone marrow aspiration (BMA) and comprehensive blood work, which additional diagnostic test should be used to confirm the diagnosis of ALL?
  - Lumbar puncture (LP)
  - Bone scan
  - Computed tomography (CT) of the head
  - Testicular biopsy
- The definitive diagnosis of ALL is confirmed when the bone marrow reveals at least what percentage of lymphoblasts?
  - 10%
  - 20%
  - 25%
  - 35%
- The most appropriate laboratory diagnostic study to establish subtypes (lineages) of ALL is
  - Cytochemistry stains.
  - Cerebrospinal fluid (CSF) cytology.
  - Immunophenotyping.
  - Cytogenetic analysis.
- The rationale for treating the central nervous system (CNS) in patients with ALL is based on which premise?
  - The CNS is considered a pharmacologic sanctuary site.
  - More than 50% of children have detectable CNS disease at diagnosis.
  - Intrathecal chemotherapy is more efficacious than radiation therapy, with fewer side effects.
  - Intrathecal chemotherapy should be given only as salvage therapy.
- Which cytogenetic abnormality is a poor prognostic indicator in children with ALL?
  - Trisomies 4 and 10
  - Translocation (4; 11)
  - Hyperploidy
  - TEL AML-1 gene
- Mrs. Smith approaches the nurse and begins crying, stating, "I caused my child's leukemia because I gave her bad genes." Which response would be most appropriate?
  - Gently reassure the mother that ALL is not considered an inherited disorder.
  - Comfort the mother and encourage her to obtain genetic testing if she decides to have another child.
  - Refer Mrs. Smith for individual counseling.
  - Encourage Mrs. Smith to attend the unit support group.
- In addition to fatigue, bone pain, and bleeding, which symptom is seen commonly in childhood ALL?
  - Fever
  - Blurred vision
  - Behavioral changes
  - Enlarged, very painful lymph nodes

## Answers

**Question 1:** The correct answer is choice c, 25%. ALL is the most common malignancy in children, accounting for nearly 25% of all cancers diagnosed in children younger than 15. About 20% of all cases of ALL occur in adults. In 2003, approximately 3,600 adults and children will be diagnosed with ALL and 1,400 people with ALL will die (American Cancer Society, 2003; National Childhood Cancer Organization, 2003; Westlake & Bertolone, 2002). Therefore, choices a, b, and d are incorrect.

**Question 2:** The correct answer is choice a, 1–4 years. Five-year survival rates have been shown to be the highest, 85%, for the 1–4 age group. Survival in children with ALL is related strongly to age at diagnosis (Westlake & Bertolone, 2002).

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