



# Acute Lymphoblastic Leukemia in Children

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1. 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?
  - a. 10%
  - b. 15%
  - c. 25%
  - d. 40%
2. 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?
  - a. 1–4 years
  - b. 5–10 years
  - c. 11–14 years
  - d. 15–19 years
3. 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?
  - a. Exposure to a rare virus
  - b. Environmental influences
  - c. Mutations in their child's cells
  - d. Radiation exposure
4. 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?
  - a. Lumbar puncture (LP)
  - b. Bone scan
  - c. Computed tomography (CT) of the head
  - d. Testicular biopsy
5. The definitive diagnosis of ALL is confirmed when the bone marrow reveals at least what percentage of lymphoblasts?
  - a. 10%
  - b. 20%
  - c. 25%
  - d. 35%
6. The most appropriate laboratory diagnostic study to establish subtypes (lineages) of ALL is
  - a. Cytochemistry stains.
  - b. Cerebrospinal fluid (CSF) cytology.
  - c. Immunophenotyping.
  - d. Cytogenetic analysis.
7. The rationale for treating the central nervous system (CNS) in patients with ALL is based on which premise?
  - a. The CNS is considered a pharmacologic sanctuary site.
  - b. More than 50% of children have detectable CNS disease at diagnosis.
  - c. Intrathecal chemotherapy is more efficacious than radiation therapy, with fewer side effects.
  - d. Intrathecal chemotherapy should be given only as salvage therapy.
8. Which cytogenetic abnormality is a poor prognostic indicator in children with ALL?
  - a. Trisomies 4 and 10
  - b. Translocation (4; 11)
  - c. Hyperploidy
  - d. *TEL AML-1* gene
9. 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?
  - a. Gently reassure the mother that ALL is not considered an inherited disorder.
  - b. Comfort the mother and encourage her to obtain genetic testing if she decides to have another child.
  - c. Refer Mrs. Smith for individual counseling.
  - d. Encourage Mrs. Smith to attend the unit support group.
10. In addition to fatigue, bone pain, and bleeding, which symptom is seen commonly in childhood ALL?
  - a. Fever
  - b. Blurred vision
  - c. Behavioral changes
  - d. 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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