Acute Lymphoblastic (or Lymphocytic) Leukemia (ALL)

Type: Cancer of white blood cells in bone marrow & blood
Subtypes: (1) pre **B-cell** & (2) pre T-cell
Patients: **Children 2-5 years old**, men and women 50+
Presentation: Symptomatic individuals.
Diagnosis: Bone marrow biopsy. History & physical, CBC, blood smears, RNA testing, lumbar puncture & imaging all will be done to assess disease status and patient prognosis. Pathological exam, cytogenetics & immunophenotyping will be done to determine if the leukemia is myeloid (AML) or lymphoblastic (ALL).
Symptoms: Weakness, fatigue, anemia, unexplained fever/infection, weight loss, appetite loss, excessive bruising, bone pain, breathlessness, enlarged lymph nodes/spleen, lower limb edema, petechia
Causes: radiation exposure, genetics (multiple suspects)
Genetic markers: Known cytogenetics focus on fusing mutations between 2 genes: TELAML1 = 25%; E2A-PBX = 5%; BCR-ABL = 2%; BLL-AF4 = 2%; IGH-MYC; TCR-RBTN2
Staging: Since ALL is not a solid tumor, the TNM staging is not applicable. FAB WHO systems are used instead.
FAB: ALL-L1 = small uniform cells; ALL-L2 = large varied cells; ALL-L3 = large varied cells with vacuoles
WHO: TEL-AML1; E2A-PBX; ABL-BCR; V-MLL
Treatment: Chemotherapy, steroids, radiation therapy, bone marrow transplant and/or stem cell transplant
Prognosis: Depends on specific mutation causing the leukemia. TEL-AML1 has the best prognosis. MLL-AF4 has worst prognosis.

Patient Lifestyle
Doctor visits: Leukemia patients will visit their medical team frequently. Treatment is aggressive and constant and often continues for years. The same diagnostic tests will usually be performed to assess disease status at check-ups.
Screening: There is no screening program for ALL

Population Stats
Incidence: 6,000 new cases per year

ALL Subtypes			
B-cell	**T-cell**	**ALL**	**Childhood ALL**
= 85% Children, 20% Adults	**= 15% Children, 80% Adults**	**= 70% Childhood Leukemias**	**= 60% of all ALL Patients**

FAQs
What is the first line of treatment for ALL?
Chemotherapy. There are 3 phases of chemotherapy for ALL: remission induction, consolidation/intensification & maintenance. Remission induction drugs are combined prednisone, asparaginase, vincristine and/or daunorubicin. Consolidation/intensification drugs include combined cyclophosphamide, cytarabine, etoposide, thioguanine and/or mercaptopurine. Maintenance therapy includes daily mercaptopurine, weekly methotrexate, monthly vincristine & regular steroids.

What is the most common type of ALL?

B-cell ALL is the most common type of ALL. 70% of children with leukemia have this specific type of cancer.

Why is it so hard to find ALL patients?

ALL is primarily a cancer of childhood. This makes it very hard to find and consent ALL patients for our trial.

What is the difference between FAB and WHO classification systems?

The French-American-British (FAB) system was developed in the 1970s and is used less often than the World Health Organization (WHO) system in classifying and developing treatment for leukemias. However, it is important to note that leukemias are inconsistently staged. Some oncologists do not bother staging but instead proceed to a standardized treatment regimen immediately upon diagnosis due to the deadly nature of these cancers.

Company Information

Take Your Research Further. Faster.

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