Childhood and Adolescent Leukemia

Leukemia is a cancer that develops in bone marrow cells that eventually circulate in the blood or lymphatic system. Leukemia can be classified by the type of cell where the cancer began. For most children with leukemia, cancer begins in immature lymphocytes and is called lymphocytic leukemia. Leukemias that start in other types of immature cells found in the blood, such as red blood cells, myeloid white blood cells, and platelets, are called myeloid, myelocytic, or myelogenous leukemias. Leukemias can also be divided into two additional groups, chronic or acute. Most leukemia in children is acute.1

Leukemia is the most common cancer in children and adolescents in both the U.S. and Texas.1 Thirty percent of all childhood cancers are leukemia.2 Among children with leukemia, slightly more than 70% will be diagnosed with acute lymphocytic leukemia (ALL). Most of the remaining cases of childhood leukemia will be acute myelogenous leukemia (AML).1 There are no recommended screening tests for leukemia in asymptomatic children or adolescents.1,3

Cancer in children and adolescents is relatively rare.3 Over nine years (1995-2003), there were 2,293 cases of leukemia, myeloproliferative or myelodysplastic disease in Texas children ages 0-14 and another 437 cases in adolescents ages 15-19.4 Hispanic children and adolescents are at a slightly higher risk of developing leukemia, myeloproliferative or myelodysplastic disease compared to non-Hispanic children and adolescents, while African-American children and adolescents have the lowest risk.5 In general, rates of leukemia and myeloproliferative or myelodysplastic disease are slightly higher in boys than girls.1,5 Little is known about the risk factors for childhood and adolescent leukemia. The few known risk factors are prenatal exposure to X-rays and certain genetic conditions, such as Down’s syndrome and Li-Fraumeni syndrome.1,3

Childhood and Adolescent Leukemia in South Texas

Incidence of childhood and adolescent leukemia in South Texas from 2000-2004 (56.3 cases of leukemia per million children or adolescents) was higher than the incidence observed either in the rest of Texas (47/million) or nationwide (43.2/million). Hispanics and non-Hispanic whites in South Texas had very slightly higher, but not statistically significantly higher, incidences of childhood and adolescent leukemia than their counterparts in the rest of Texas and nationwide (Figure 5.25). In South Texas, the incidence of childhood and adolescent leukemia was slightly higher, but not statistically
significantly higher, for Hispanics (59/million) than for non-Hispanic whites (48.7/million) (Figure 5.25).

Figure 5.25. Age-adjusted incidence of child and adolescent leukemia by location. Source of Texas incidence: Texas Cancer Registry, Cancer Epidemiology and Surveillance Branch, Texas Department of State Health Services, 2000-2004 data. National: National Cancer Institute, 17-region SEER data, 2000-2003

The incidence of childhood leukemia (62.8/million) was nearly two times higher than the incidence of adolescent leukemia (37.1/million) in South Texas during 2000-2004. The incidence of leukemia in South Texas decreased with age. Incidence was highest among children 0-4 years old (Figure 5.26).
As observed nationwide, incidence of childhood and adolescent leukemia in South Texas was higher for males (67.2/million) than for females (45.1/million).

The overall child and adolescent leukemia mortality rate in South Texas was 13.8/million. The trend in age-specific child and adolescent leukemia was quite different than the trend in incidence; the highest mortality rate was seen among the adolescent (15-19) age group (Figure 5.27). However, none of the age groups’ mortality rates were statistically significantly different from any of the others. Except for the age trend, all other leukemia mortality rate patterns were similar to those for leukemia incidence.
Figure 5.27. Child and adolescent leukemia mortality in South Texas by age group, 2000-2004. Source: Texas Cancer Registry, Cancer Epidemiology and Surveillance Branch, Texas Department of State Health Services

References


