

Long-term sequelae in survivors of childhood leukemia with Down syndrome: a matched cohort study from the Childhood Cancer Survivor Study.

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Purpose:

Children with Down Syndrome (DS) are at increased risk of acute leukemia and of acute therapy-related toxicities compared to children without DS. Whether they are at a heightened risk for late effects is unknown. This study describes the prevalence, severity and cumulative incidence of late chronic conditions in DS survivors of childhood leukemia compared to survivors without DS.

Description:

In a matched cohort study, 52 DS cases with childhood leukemia and a comparison group of 213 non-DS survivors (matched by leukemia, age at diagnosis, race, gender and treatment factors) from 4,830 five-year survivors in the Childhood Cancer Survivor Study cohort. Hazard Ratios (HR) and 95% Confidence Intervals were evaluated in Cox Regression models to determine relative risk of chronic health conditions as classified using the NCI Common Terminology Criteria for Adverse Events.

Results:

The percent of subjects experiencing at least one chronic condition (Grade 1 - 5) more than 5 years after diagnosis of leukemia was similar in the DS population of survivors when compared to the non-DS group (DS 21.2%; non-DS 28.6%, HR = 0.9[0.5-1.8]). Severe chronic conditions (Grade 3 - 5) developing at least 5 years after diagnosis were more common in DS survivors of leukemia (DS 19.2%; non-DS 10.3%, HR = 2.1[1.0-4.4]). The cumulative incidence of a severe chronic health condition was 44% for DS survivors and 24% for non-DS survivors at 35 years post diagnosis; however, cataracts, hearing loss and endocrine effects, particularly hypothyroidism, accounted for much of the observed difference.

Conclusions:

The incidence of late onset chronic conditions is similar in DS survivors when compared to non-DS survivors of leukemia. While DS survivors are at higher risk of developing serious chronic conditions, this likely reflects the natural history of DS. Regardless, practitioners should be aware of the increased risks of certain chronic conditions.