RISK OF DISEASE RECURRENCE AND SECOND NEOPLASMS (SN) IN SURVIVORS OF CHILDHOOD CANCER TREATED WITH GROWTH HORMONE (GH): DATA FROM THE CHILDHOOD CANCER SURVIVOR STUDY (CCSS)

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GH deficiency is common after treatment of childhood cancer but safety of GH therapy is of concern to M.D.s and families. Prior studies are limited: small *n's* with insufficient power; data confined to survivors of CNS tumors; lack of data on risk of SN; inadequate controls. To overcome these shortcomings, we studied 361 GH-treated cancer survivors from among 13,322 survivors enrolled in CCSS, a cohort of 5-year survivors of childhood cancer diagnosed from 1970-1986 and treated at 25 centers throughout North America.

Patients: 237 males, median age 3.5 years at cancer dx, 11 years at start GH. Diagnosis: CNS tumor (n=172), acute leukemia (n=122), sarcoma (n=43), neuroblastoma (n=17).

Results: Using a Cox time-dependent proportional hazards model adjusted for covariates, GH-treated compared to non GH-treated, the relative risk (RR) of tumor recurrence was 0.8 (95% CI = 0.4-1.9, p = 0.69). The RR was <1 (i.e., no increased risk) for all major cancer diagnoses. GH-treated pts were diagnosed with 15 SN, all solid tumors and no secondary leukemia, giving an overall RR of 3.1 (95% CI = 1.8-5.3, p<0.0001). This was mainly due to a small excess number of SN observed in GH-treated survivors of acute leukemia (RR = 5.0, 95% CI = 2.0-12.8, p<0.001). The risk of death was not associated with GH (RR = 0.8, p = 0.6.

Conclusions: GH therapy does not appear to increase the risk of tumor recurrence or death in survivors of childhood cancer. The increased number of SN, particularly in acute leukemia pts, is of concern but the data need to be interpreted with caution given the small number of events.
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