Endocrine Outcome in Long-Term Survivors of Childhood Brain Tumors.

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Abstract

Aim: To evaluate the rates of endocrine abnormalities in survivors of childhood brain tumors and identify risk factors.

Methods: The medical charts of patients were reviewed for background, disease-related and treatment-related data. Endocrine dysfunction was determined by clinical and laboratory evaluation. Results: The study group included 114 patients with a mean age of 15.57 ± 5.93 years. Mean age at brain tumor diagnosis was 7.07 ± 5.42 years, and mean follow-up was 12.8 ± 6.25 years. Fifty-seven patients (50%) had an endocrine abnormality. The occurrence of several endocrine abnormalities was significantly associated with cranial irradiation and age <16 years at tumor diagnosis. The presence of growth hormone deficiency (n = 40) was associated with cranial or spinal irradiation, younger age and prepubertal stage at tumor diagnosis; the presence of hypogonadotropic hypogonadism (n = 9) was associated with prepubertal stage at diagnosis, and hypothyroidism (n = 23) was associated with cranial irradiation. Hypocortisolism was diagnosed in 9 patients, short stature in 20 patients and obesity in 8 male patients. Patients with early puberty (n = 19) and an abnormal lipid profile (n = 15) were significantly younger at tumor diagnosis than patients without these disorders.

Conclusions: Childhood brain tumor survivors are at increased risk of late endocrine effects, particularly those treated with cranial radiation and diagnosed at a younger age. The frequency of hormonal deficits increases with time, warranting lifelong surveillance.

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