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Abstract

Purpose

The aim of this study was to assess the risk of second malignant neoplasms (SMNs) other than central nervous system (CNS) neoplasms after childhood CNS cancer in an international multicentre study.

Methods

Individual data on cases of CNS cancer in children (0–14 years) and on subsequent SMNs were obtained from 13 population-based cancer registries contributing data for different time periods in 1943–2000. Standardised incidence ratios (SIRs) with 95% confidence intervals (CI), absolute excess risk and cumulative incidence of SMNs were computed.

Results

We observed 43 SMNs in 8431 CNS cancer survivors. The SIR was 10.6 (4.85–20.1) for thyroid cancer (nine cases), 2.75 (1.01–5.99) for leukaemia (six cases) and 2.47 (0.90–5.37) for lymphoma (six cases). The SIRs were highest in the first 10 years after CNS cancer diagnosis. The cumulative incidence of non-CNS SMNs was 3.30% (0.95–5.65%) within 45 years after a CNS cancer diagnosis. Within 15 years, the cumulative incidence was highest for cases diagnosed after 1980 (0.56%, 95% CI: 0.29–0.82%).

Conclusion

This population-based study indicates that about one every 180 survivors of a childhood CNS cancer will develop a non-CNS SMN within the following 15 years. The excess is higher after glioma and embryonal malignant tumour than after another CNS tumour.



Keywords: Neoplasms; Second primary; Primary central nervous system neoplasms; Childhood cancer

Article Outline

1. [Introduction](#)
2. [Materials and methods](#)
3. [Statistical analysis](#)
4. [Results](#)
5. [Discussion](#)

[Conflict of interest statement](#)

[Acknowledgements](#)

[References](#)

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