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Poor-risk high-grade gliomas in three survivors of childhood acute lymphoblastic leukaemia--an overview of causative factors and possible therapeutic options.

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PURPOSE: Malignant high-grade gliomas are the most common secondary neoplasms in children cured of acute lymphoblastic leukaemia (ALL). Although many predisposing factors exist (including systemic or intrathecal chemotherapy, young age, brain infiltration and genetic predispositions), cranial irradiation appears to be the strongest one. **METHODS:** Three cases of secondary high-grade gliomas (two multiform glioblastomas, grade IV; one anaplastic astrocytoma, grade III) developed in ALL survivors (F-M, 1:2) 3 to 6.3 years after stopping ALL therapy according to BFM-90 trial. **RESULTS:** All tumours were supratentorial, contrast-enhancing, space-occupying, highly advanced and aggressive. Possible risk factors and current therapeutic options for paediatric ALL and malignant gliomas are reviewed and discussed. **CONCLUSIONS:** Prognosis in secondary malignant gliomas in children is poor (overall survival of 5, 10 and 19 months) despite intense therapy. Thus, protocols for paediatric ALL reduce prophylactic cranial irradiation in favour of intrathecal and intravenous high-dose MTX. Nevertheless, ALL survivors must undergo systematic, long-term surveillance for early detection of intracranial neoplasms.

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