Use of high-dose chemotherapy in front-line therapy of childhood malignant glioma.

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Abstract

Brain tumors are the second most common cancer in pediatric patients and the main cause from death of malignant tumors in this age group. High-grade or malignant glioma, among which anaplastic astrocytomas and glioblastoma are the most prevalent histotypes, represent 10% of pediatric brain tumors and, taken as a whole, are the second most frequent malignant histotype after medulloblastoma. Apart from complete excision followed by full-dose local radiotherapy, chemotherapy appears to provide some benefit to the final outcome. Different trials have explored the role of high-dose chemotherapy that, theoretically, could give an advantage to these patients by overcoming the blood-brain barrier, cell chemoresistance and inducing a wider number of responses. However, it is still doubtful if more responses translate into better outcome and it is not fully understood which patients can experience a true benefit from this treatment strategy. New protocols under evaluation include new agents with specific biological targets, multiple cycles of high-dose chemotherapy, and vaccination, as an immunotherapeutic approach.

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