Malignant astrocytoma in elderly patients: where do we stand?

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Abstract

PURPOSE OF REVIEW: Age is inversely correlated with clinical outcome and a strong prognostic factor for the course of most primary brain tumors including malignant astrocytoma, i.e. anaplastic astrocytoma and glioblastoma. We here review available clinical outcome data and discuss future directions of clinical research.

RECENT FINDINGS: The standard of care in patients with malignant astrocytoma above the range of 65-70 years was considered radiotherapy, preferentially using a hypofractionated regimen (15 × 2.66 Gy). Two phase III clinical trials, the NOA-08 and Nordic trials, demonstrated that temozolomide (TMZ) therapy alone was not inferior to radiotherapy alone, and methylation of the O-methylguanine-DNA-methyltransferase (MGMT) gene promoter was predictive with a methylated MGMT promoter indicating a benefit from TMZ chemotherapy. Ongoing clinical trials in this patient population include the National Cancer Institute of Canada/European Organisation for Research and Treatment of Cancer intergroup trial, investigating the combination of hypofractionated radiotherapy and TMZ chemotherapy, and the Swiss ARTE trial, investigating the combination of bevacizumab and hypofractionated radiotherapy. Recent translational studies indicate that prognostically favorable factors in malignant astrocytoma from younger patients are virtually absent in the elderly.

SUMMARY: Current standard of care for elderly patients with malignant astrocytoma involves a treatment strategy based on the MGMT gene promoter methylation status. The role of combined radiotherapy and TMZ chemotherapy and a potential role for the addition of anti-VEGF therapy to radiotherapy are currently addressed in ongoing trials. The lack of favorable prognostic factors in tumor tissue might in part explain the poorer clinical outcome of elderly patients.

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