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# Exploring management and outcomes of elderly patients with glioblastoma using data from two randomised trials (GEINO1401/EX-TEM)

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## Abstract

**Purpose:** The impact of age on optimal management of glioblastoma remains unclear. A recent combined analysis of two randomised trials, GEINO14-01 and EX-TEM, found no benefit from extending post-radiation temozolomide in newly diagnosed glioblastoma. Here, we explore the impact of age.

**Methods:** Relevant intergroup statistics were used to identify differences in tumour, treatment and outcome characteristics based on age with elderly patients (EP) defined as age 65 years and over. Survival was estimated using the Kaplan Meier method.

**Results:** Of the combined 205 patients, 57 (28%) were EP. Of these, 95% were ECOG 0-1 and 65% underwent macroscopic resection compared with 97% and 61% of younger patients (YP) respectively. There were numerically less MGMT-methylated (56% vs. 63%,  $p = 0.4$ ) and IDH-mutated (4% vs. 13%,  $p = 0.1$ ) tumours in EP vs. YP. Following surgery, EP were more likely to receive short course chemoradiation (17.5% vs. 6%,  $p = 0.017$ ). At recurrence, EP tended to receive or best supportive care (28.3% vs. 15.4%,  $p = 0.09$ ) or non-surgical options (96.2% vs. 84.6%,  $p = 0.06$ ), but were less likely to receive bevacizumab (23.1% vs. 49.5%,  $p < 0.01$ ). Median PFS was similar at 9.3months in EP and 8.5months in YP, with similar median OS at 20months.

**Conclusion:** In this trial population of predominantly fit EP, survival was similar to YP despite a proportion receiving less aggressive therapy at diagnosis and recurrence. Advancing age does not appear to be an adverse prognostic factor for glioblastoma when patients are fit for treatment, and a less aggressive approach in selected patients may not compromise outcomes.

**Keywords:** Elderly; Glioblastoma; Prognosis; Survival; Treatment.

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