The clinical trials landscape for glioblastoma: is it adequate to develop new treatments?


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BACKGROUND: There have been few treatment advances for patients with glioblastoma (GBM) despite increasing scientific understanding of the disease. While factors such as intrinsic tumor biology and drug delivery are challenges to developing efficacious therapies, it is unclear whether the current clinical trial landscape is optimally evaluating new therapies and biomarkers.

METHODS: We queried ClinicalTrials.gov for interventional clinical trials for patients with GBM initiated between January 2005 to December 2016 and abstracted data regarding phase, status, start and end dates, testing locations, endpoints, experimental interventions, sample size, clinical presentation/indication, and design to better understand the clinical trials landscape.

RESULTS: Only approximately 8%-11% of patients with newly diagnosed GBM enroll on clinical trials with a similar estimate for all patients with GBM. Trial duration was similar across phases with median time to completion between 3 and 4 years. While 93% of clinical trials were in phases I-II, 26% of the overall clinical trial patient population was enrolled on phase III studies. Of the 8 completed phase III trials, only one reported positive results. Although 58% of the phase III trials were supported by phase II data with a similar endpoint, only 25% of these phase II trials were randomized.

CONCLUSIONS: The clinical trials landscape for GBM is characterized by long development times, inadequate dissemination of information, suboptimal go/no-go decision-making, and low patient participation.

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