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Trends in Immunotherapy Clinical Trials to Treat Glioblastoma: A Look at Progress and Challenges

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Abstract

Purpose: We aimed to catalog past and present clinical trials on immunotherapy treatments for glioblastoma (GBM) and discover relevant trends in this field.

Methods: Former and ongoing clinical trials involving the use of immunotherapy to treat GBM were queried in July 2022 within the clinicaltrials.gov registry (<https://clinicaltrials.gov/>). Pertinent trials were categorized by variables including immunotherapy classification, tumor type (newly diagnosed vs. recurrent), country of origin, start date, clinical phase, study completion status, estimated subject enrollment, design, publication status, and funding source.

Results: A list of 173 trials were identified in total. The number of immunotherapy clinical trials to treat GBM has increased over time. The largest proportion of trials were gene therapies (97 studies; 56.1%) and viral therapies (37 studies; 21.4%). Studies were designated as a biologic (45.1%), drug (43.9%), genetic (2.3%), or procedure (1.2%). Trials spanned 19 countries; China, the second largest contributor (5.8%) after the United States (70.0%), has increased clinical trial development in the past years. The average time to completion was 52.3 months. Trials were primarily funded by academic centers; however, one-fourth of the trials were funded by industry and two were funded by foundations. One-tenth of the trials were active and over one-third were linked to publications.

Conclusions: Our findings provide a comprehensive summary of the state of immunotherapy clinical trials for GBM, highlighting the evolving nature and growing scope of this field.

Keywords: clinical trials; glioblastoma; immunotherapy; new treatments.

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