ABSTRACT

Advances in Immunotherapies for Gliomas.

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PURPOSE OF REVIEW: Immunotherapy-based treatment of glioblastoma has been challenging because of the tumor's limited neoantigen profile and weakly immunogenic composition. This article summarizes the current clinical trials underway by evaluating the leading immunotherapy paradigms, the encountered barriers, and the future directions needed to overcome such tumor evasion.

RECENT FINDINGS: A limited number of phase III trials have been completed for checkpoint inhibitor, vaccine, as well as gene therapies, and have been unable to show improvement in survival outcomes. Nevertheless, these trials have also shown these strategies to be safe and promising with further adaptations. Further large-scale studies for chimeric antigen receptors T cell therapies and viral therapies are anticipated. Many current trials are broadening the number of antigens targeted and modulating the microtumor environment to abrogate early mechanisms of resistance. Future GBM treatment will also likely require synergistic effects by combination regimens.