Immune checkpoint inhibitors for intracranial metastases treatment

- The Efficacy and Safety of Brain Radiotherapy Combined With Immune Checkpoint Inhibitors (ICIs) for Small-Cell Lung Cancer (SCLC) Patients With Brain Metastases (BMs)
- Precision medicine approaches to CNS metastatic disease
- First-Line Immune-Combination Therapy for Driver Gene-Negative NSCLC With Brain Metastases: Real-World Outcomes
- Survival Outcomes in EGFR-Mutant Non-Small Cell Lung Cancer With Brain Metastases: Kaplan-Meier and Cox Regression Analyses Across Treatment Stages
- Intrathecal nivolumab and IL-2 for treatment of leptomeningeal metastases in EGFR-mutated lung adenocarcinoma
- Efficacy and safety of immune checkpoint inhibitors combined with radiotherapy in non-small-cell lung cancer: A meta-analysis with potential clinical predictors
- Nivolumab and stereotactic radiosurgery for patients with breast cancer brain metastases: long-term results and biomarker analysis from a non-randomized, open-label, phase Ib study
- PD-L1, Tumor Mutational Burden, and Outcomes in NSCLC With Brain Metastases: A Brief Report

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Immune checkpoint inhibitors (ICIs) are a type of cancer immunotherapy that help the body's immune system recognize and attack cancer cells. While the effectiveness of ICIs in treating intracranial metastases has not been extensively studied, there is some evidence to suggest that they may be effective in certain cases.

One challenge in using ICIs to treat brain metastases is the blood-brain barrier, which can prevent the drugs from reaching the cancer cells in the brain. However, some research has suggested that the barrier may be less effective in the areas immediately surrounding metastases, allowing ICIs to penetrate these areas.

There have been a few small studies of ICIs for the treatment of brain metastases in specific types of cancer. For example, a 2018 study of patients with melanoma and brain metastases found that the PD-1 inhibitor pembrolizumab was effective in controlling brain metastases in some patients. Similarly, a 2019 study of patients with non-small cell lung cancer and brain metastases found that treatment with the PD-L1 inhibitor atezolizumab was associated with improved survival.

Overall, while the data on the use of ICIs for the treatment of intracranial metastases is limited, the results of these studies suggest that they may be a promising treatment option for certain patients. However, much more research is needed to fully understand the benefits and risks of using ICIs for the treatment of brain metastases. As with any cancer treatment, the decision to use ICIs for the treatment of intracranial metastases should be made on a case-by-case basis, in consultation with a healthcare provider.

Intracranial metastatic disease (IMD) complicates the course of nearly 2-4% of patients with systemic cancer. The prevalence of IMD has been increasing over the past few decades. Historically, definitive treatment for brain metastases (BM) has been limited to radiation therapy or surgical resection. Chemotherapies have not typically proven valuable in the treatment of IMD, with the exception of

highly chemotherapy-sensitive lesions. Recent data have supported the role of systemic targeted therapies and immune checkpoint inhibitors (ICIs) in the treatment of select patients with IMD. There remains, however, a clear clinical need for further investigation to delineate the role of ICIs in patients with BM [1)]

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Patel Z, Cho M, Das S. The role of immune checkpoint inhibitors in patients with intracranial metastatic disease. J Neurooncol. 2023 Feb 15. doi: 10.1007/s11060-023-04263-0. Epub ahead of print. PMID: 36790654.