Chemotherapy for brain metastases

- Graphene Quantum Dots for Glioblastoma Treatment and Detection-Systematic Review
- Pyrogallol induces apoptosis, oxidative stress and cell cycle arrest in C6 glioma cells: a potential therapeutic agent
- Effective Targeting of Glioma Stem Cells by BSJ-04-122, a Novel Covalent MKK4/7 Dual Inhibitor
- Piperine Targets MAOB and Enhances Temozolomide-induced Cytotoxicity in Glioblastoma Cell Lines
- Effects of Azelastine on Glioblastoma Cells
- Cancer Stem Cells in Glioblastoma: The Role of the mTOR Pathway
- MiR 329/449 Suppresses Cell Proliferation, Migration and Synergistically Sensitizes GBM to TMZ by Inhibiting Src/FAK, NF-kB, and Cyclin D1 Activity
- RIPK1 in Diffuse Glioma Pathology: From Prognosis Marker to Potential Therapeutic Target

The chemotherapy drugs used to treat brain metastases are typically different from those used to treat primary brain tumors because the brain has a protective barrier, known as the blood-brain barrier, which prevents many drugs from entering.

A variety of chemotherapeutic agents have been used to treat brain metastasis from lung, breast, and melanoma, including cisplatin, cyclophosphamide, etoposide, teniposide, mitomycin, irinotecan, vinorelbine, etoposide, ifosfamide, temozolomide, fluorouracil (5FU), and prednisone

Bevacizumab

Off-label use in radiation necrosis with good results in selected patients.

Carmustine Wafer

To avoid the decline in neurocognitive function (NCF) linked to WBRT, the authors conducted a prospective, multicenter, phase 2 study to determine whether surgery and carmustine wafers (CW), while deferring WBRT, could preserve NCF and achieve local control (LC).

NCF and LC were measured in 59 patients who underwent resection and received CW for a single (83%) or dominant (oligometastatic, 2 to 3 lesions) metastases and received stereotactic radiosurgery (SRS) for tiny nodules not treated with resection plus CW. Preservation of NCF was defined as an improvement or a decline ≤ 1 standard deviation from baseline in 3 domains: memory, executive function, and fine motor skills, evaluated at 2-month intervals.

Significant improvements in executive function and memory occurred throughout the 1-year follow-up. Preservation or improvement of NCF occurred in all 3 domains for the majority of patients at each of the 2-month intervals. NCF declined in only 1 patient. The chemowafers were well tolerated, and serious adverse events were reversible. There was local recurrence in 28% of the patients at 1-year follow-up.

The rate of LC (78%) was comparable to historic rates of surgery with WBRT and superior to reports of WBRT alone. For patients who undergo resection for symptomatic or large-volume metastases or for

tissue diagnosis, the addition of CW can be considered as an option [1].

1)

Brem S, Meyers CA, Palmer G, Booth-Jones M, Jain S, Ewend MG. Preservation of neurocognitive function and local control of 1 to 3 brain metastases treated with surgery and carmustine wafers. Cancer. 2013 Nov 1;119(21):3830-8. doi: 10.1002/cncr.28307. Epub 2013 Aug 23. PubMed PMID: 24037801.