

Anaplastic Meningioma Chemotherapy

There are no effective chemotherapeutic agents available ¹⁾. They did not have a demonstrable effect on survival ²⁾.

The role of systemic anti-meningioma treatment remains to be defined, due to a paucity of literature, few prospective clinical trials, and a lack of standardized response criteria by which to define drug activity ^{3) 4) 5) 6) 7) 8) 9) 10) 11) 12) 13)}.

Currently, and as outlined in the [NCCN CNS guidelines](#), systemic drugs with presumed activity in recurrent meningioma comprise only three classes of agents: [Interferon-alfa](#), [somatostatin receptor agonists](#), and [vascular endothelial growth factor](#) (VEGF) signaling pathway inhibitors.

Moazzam et al., reviewed in 2013, on emerging avenues for therapy, clinical efficacy, and adverse effects.

A review of the literature was performed to identify any studies exploring recent medical and chemotherapeutic agents that have been or are currently being tested for meningiomas.

Current guidelines recommend only 3 drugs that can be used to treat patients with refractory and highgrade meningiomas: [hydroxyurea](#), [Interferon-alfa](#) 2B, and [Sandostatin](#) long-acting release. Recent developments in the medical treatment of meningiomas have been made across a variety of pharmacological classes, including cytotoxic agents, hormonal agents, immunomodulators, and targeted agents toward a variety of growth factors and their signaling cascades. Promising avenues of therapy that are being evaluated for efficacy and safety include antagonists of platelet-derived growth factor receptor, epidermal growth factor receptor, vascular endothelial growth factor receptor, and mammalian target of rapamycin. Because malignant transformation in meningiomas is likely to be mediated by numerous processes interacting via a complex matrix of signals, combination therapies affecting multiple molecular targets are currently being explored and hold significant promise as adjuvant therapy options.

Improved understanding of the molecular mechanisms driving meningioma [tumorigenesis](#) and malignant transformation has resulted in the targeted development of more specific agents for chemotherapeutic intervention in patients with nonresectable, aggressive, and malignant meningiomas ¹⁴⁾.

Case reports

2016

Lucchesi et al., report a case of 2-year-old male child with diagnosis of postoperative relapse of a malignant meningioma. Considering the rapid progression, the young age and the lack of effective therapeutic alternatives, the patient underwent multidisciplinary anticancer treatment with a protocol made for soft tissue [sarcomas](#) (EpSSG NRSSTS 2005 protocol), with positive outcome. This case represents a successful management of an anaplastic meningioma with a multimodal treatment,

including chemotherapy, in a pediatric patient ¹⁵⁾.

1974

A 71-year-old man was admitted with a headache and left hemiparesis. Magnetic resonance imaging (MRI) revealed mass lesions at the right frontal convexity and left occipital lobe. Following surgery, pathological examinations demonstrated an anaplastic meningioma. After 3 month from the operation and radiation therapy, the lung cancer was removed. Pathological findings of lung cancer resembled his brain tumor. The diagnosis of the lung cancer was metastatic lung cancer from anaplastic meningioma. 2 months later from the lung surgery, he had focal recurrence at frontal convexity area and progress into cavernous sinus revealed by MRI. Abdominal CT was detected new metastatic lesion at his liver. He received adjuvant reirradiation consisting of whole brain radiotherapy. In addition, he received the chemotherapy using angiogenesis receptor (bevacizumab). Chemotherapy with hydroxyurea was initiated after 2 course of chemotherapy of bevacizumab, because of his hepatic lesions were more aggressive. Intracranial mass was redeuced by 50% after 8weeks of initiated of chemotherapy with hydroxyurea. However, there were no significant change in liver and lung metastases ¹⁶⁾.

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