



# Gemcitabine in Recurrent Meningioma

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Meningiomas are the most common primary intracranial neoplasms.<sup>1</sup> Grade I meningiomas are benign and managed by surgical resection alone.<sup>1</sup> However, Grade II and III require adjuvant radiation and are characterized by their aggressive nature and high rates of recurrence.<sup>1</sup> Unresectable recurrent high-grade meningiomas, refractory to radiotherapy, have a dismal prognosis with 26% progression-free survival of 6 months.<sup>2</sup> Systemic chemotherapy with interferon- $\alpha$  and somatostatin analogs, sunitinib, and bevacizumab has been tried with limited efficacy.<sup>3</sup> Recently, Takeda et al demonstrated *in vitro* and *in vivo* activity of gemcitabine in high-grade meningiomas.<sup>4</sup>

Inspired by these results, at our institute, we have given gemcitabine to three patients of recurrent meningioma on compassionate grounds. All these three patients had earlier underwent surgery, radiation, followed by reradiation at first progression and were not a candidate for local therapy anymore. The time to progression over immediate previous treatment was 1 month in the first patient and 5 months in the second and third patients. The schedule of gemcitabine used was weekly 1,000 mg/m<sup>2</sup> on day 1, day 8, and day 15 for a 28-day cycle. The best response was stable disease in all three patients. The number of cycles of gemcitabine received was 12, 5, and 10 in the first, second, and third patient, respectively. No major adverse events were observed except Grade

II thrombocytopenia in one patient. Time to progression was 12 months in the first patient, 6 months in second patient, and 11 months in the third patient. The results are exciting and warrant further evaluation of this drug in this setting. Currently, a single-arm phase 2 trial is undergoing at our institute (CTRI/2019/02/017499) evaluating the efficacy of gemcitabine in recurrent Grade II/III meningiomas.

## Funding

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## Conflicts of Interest

There are no conflicts of interest.

## References

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