RESEARCH HIGHLIGHTS

CNS CANCER

Oncolytic adenovirus effective in patients with glioblastoma

One of these ... remains alive 4.5 years after initiating treatment Patients with glioblastoma have a median survival duration of approximately 15 months after diagnosis, despite routinely undergoing treatment with surgery and chemoradiotherapy. Now, the findings of a phase I study involving the oncolytic adenovirus tasadenoturev demonstrate not only the safety and efficacy of this approach, but also long-term survival in a subset of patients. A total of 37 patients with recurrent

glioblastoma received tasadenoturev, either as a single intratumoural injection (in 25 patients) or as an intratumoural injection delivered via a permanently implanted catheter (in 12 patients), followed by en bloc resection at 14 days after injection to investigate the mechanism of action.

Patients receiving direct intratumour injections formed the dose-escalation cohort, in which no maximum-tolerated dose was identified owing to a lack of grade ≥3 adverse events; however, two patients had grade 1–2 headache, nausea, confusion, vomiting and pyrexia. The majority, 72% of patients in the dose-escalation cohort had a response to treatment, with a median survival duration of 9.5 months, regardless of the dose received. Remarkably, five patients in the dose-escalation cohort survived >3 years after treatment, including three patients who had a \geq 95% reduction in lesion size. One of these near-complete responders remains alive 4.5 years after initiating treatment, despite a second recurrence that was successfully retreated with tasadenoturev.

Analyses of samples from patients who received tasadenoturev revealed the presence of viral E1A or hexon proteins in addition to prominent inclusion bodies in 6 of 11 samples, suggesting that the virus was able to lyse cells and replicate after injection. These promising findings indicate a need for further investigations of the efficacy of tasadenoturev in patients with glioblastoma.

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ORIGINAL ARTICLE Lang, F. F. et al. Phase I study of DNX-2401 (Delta-24-RGD) oncolytic adenovirus: replication and immunotherapeutic effects in recurrent malignant glioma. J. Clin. Oncol. <u>https://doi.org/10.1200/ICO.2017.75.8219</u> (2018)