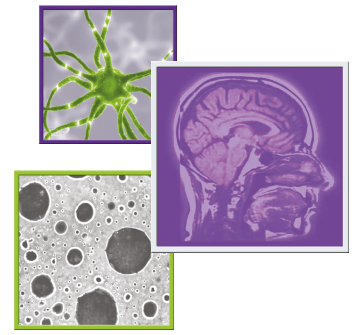
Journal Watch

CNS Oncology



Journal Watch: our panel of experts highlight the most important research articles across the spectrum of topics relevant to the field of CNS oncology

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First draft submitted: 30 January 2019; Accepted for publication: 30 January 2019; Published online: 3 July 2019

Keywords: adverse event • DCVax • PVSRIPO • temozolomide • TTF

Liau L, Ashkan K, Tran DD *et al.* First results on survival from a large Phase III clinical trial of an autologous dendritic cell vaccine in newly diagnosed glioblastoma. *J. Transl. Med.* 16,142 (2018)

In this multicenter Phase III clinical trial, the authors presented an interim analysis of an autologous dendritic cell vaccine, DCVax-L, used in newly diagnosed glioblastoma, where close to 90% of participants received treatment due to crossover design. The results showed a mean overall survival (OS) of 23.1 months, with 2- and 3-year survival rates of 46.2 and 25.4%, respectively. This was higher in patients with methylated *MGMT* status (mOS 34.7 vs 19.8 months). DCVax was shown to be well tolerated and safe, with only 2.1% of patients experiencing serious adverse events. Dendritic cells are key regulators of immune tolerance and immunity and the results from this study are very encouraging and demonstrate the potential of immunotherapy.

– Written by Liming Qiu and Wai Hoe Ng

Stupp R, Taillibert S, Kanner A *et al.* Effect of tumor treating fields plus maintenance temozolomide versus maintenance temozolomide alone on survival in patients with glioblastoma. *JAMA* 318(23), 2306–2316 (2017).

Tumor treating fields (TTF) is one novel glioblastoma (GBM) treatment that has shown survival benefit in large clinical trials.

This study is a multicenter open-label Phase III randomized controlled trial that showed TTF with maintenance temozolomide (TTF–TMZ) improves progression-free survival and OS in functionally independent adult patients with newly diagnosed supratentorial GBM after maximal safe resection and concomitant chemoradiation. A total of 695 patients were adequately randomized and stratified according to the extent of resection and *MGMT* status. Median progression free survival from randomization and median OS was 6.7 and 20.9 months in TTF–TMZ group and 4.0 and 16.0 months in the TMZ group. Concerns of tolerability were addressed with 75% of patients complying to treatment of more than 18 h each day.

TTF is a noninvasive therapy that can be used in combination with biotherapy and immunotherapy for better outcomes in GBM treatment.

– Written by Jia Xu Lim and Wai Hoe Ng

Desjardins A, Gromeier M, Herndon J *et al.* Recurrent glioblastoma treated with recombinant poliovirus. *N. Engl. J. Med.* 379(2), 150–161 (2018).

This Phase-I trial explores the therapeutic potential of the live-attenuated poliovirus type 1 (Sabin) vaccine, PVSRIPO, using a novel convection-enhanced intratumoral delivery technique. To stimulate antitumor immunity and overcome limitations of the blood–brain barrier, a catheter delivers the drug in 61 patients in both dose-escalation and dose-expansion phases, matching patient data against historical controls under an external data and safety monitoring board. While overall survival in the treatment group reached only 12.5 months (cf. 11.3 months in the control group), a plateau of 21% was seen from 24 to 60 months, compared with 14 and 4% at 24 and 36 months in the control group, respectively. Patients with the *IDH1 R132* mutation unfortunately showed no

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survival advantage. While there was an adverse event rate of 88%, only 17% of patients were found to sustain a serious adverse event.

The use of bevacizumab post-PVSRIPO infusion conferred a further survival benefit with a disease-free interval of up to 34.1 months and survival up to 70.4 months.

– Written by Nishal K Primalani and Wai Hoe Ng

Financial & competing interests disclosure

The authors have no relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript. This includes employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties.

No writing assistance was utilized in the production of this manuscript.