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## CENTRAL NERVOUS SYSTEM TUMORS

# NovoTTF-100A alternating electric fields therapy for recurrent glioblastoma: An analysis of patient registry data.

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### Abstract

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**Background:** The NovoTTF-100A is a first-of-a-kind anticancer device, approved by the Food and Drug Administration in 2011, for the treatment of recurrent glioblastomas. It emits alternating electric fields, at an intensity of 1 V/cm and a frequency of 200 kHz, that mimic the cytotoxic effect of chemotherapy by disrupting charged cytoplasmic proteins involved in the tightly orchestrated process of mitosis. Past phase III trial demonstrated equivalent efficacy when the device was compared to conventional cytotoxic chemotherapies and bevacizumab, but without their systemic side effects. **Methods:** The NovoTTF-100A device has been available by prescription at 91 oncology centers in the United States since November 2011. We retrospectively analyzed the outcome and toxicity data from patients who were prescribed the device from October 2011 to November 2013 as treatment for their recurrent glioblastomas. **Results:** There were 147 female and 310 male patients (n=457) who were treated with this device. The median age was 55 (range 18 to 86) years. The Kaplan-Meier median OS was 9.6 (95% confidence interval [CI] 8.0 to 13.7) months and the median treatment duration was 4.1 (95% CI 3.5 to 4.8) months. The most common device-related adverse events include skin reaction (24.3%), neurological disorders (10.4%), heat sensation (8.9%), electric sensation (7.7%) and headache (5.7%). **Conclusions:** Treatment with NovoTTF-100A, as prescribed in the general clinical setting to patients with recurrent glioblastomas, offers favorable outcomes compared to historical patient data. The adverse event profile of the device remains benign with no new unexpected toxicities.