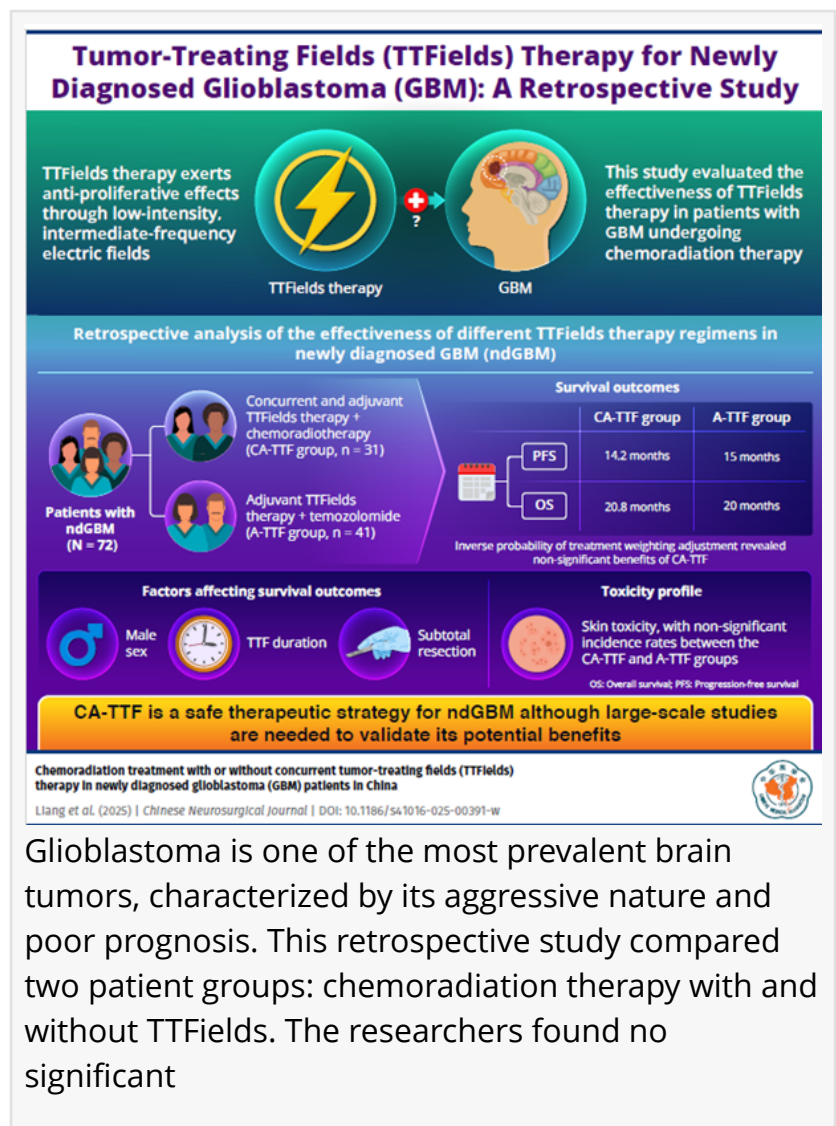


Chinese Neurosurgical Journal Study Explores New Treatment Strategy for Patients with Glioblastoma

Researchers study the clinical outcomes of using tumor-treating fields therapy, with or without chemoradiation, in patients with newly diagnosed glioblastoma

BEIJING, BEIJING, CHINA, August 12, 2025 /EINPresswire.com/ -- The most prevalent malignant brain tumor in adults – glioblastoma (GBM) – is an aggressive cancer with a poor prognosis. Several preclinical studies suggest that the addition of tumor-treating fields (TTFields) to chemoradiation therapy (CRT) helps improve the progression-free survival (PFS) and overall survival (OS) in patients with GBM. TTFields therapy is a novel treatment strategy for cancer, in which tumors are exposed to low-intensity electrical fields of intermediate-frequency to inhibit cancer cell replication. According to previous reports, apart from an anti-mitotic effect, TTFields also increase cell permeability, activate autophagy, stimulate immune responses, and inhibit the DNA damage repair pathway of cancer cells. Increased cell permeability after TTFields therapy ensures better delivery of chemotherapeutic agents like temozolomide to glioma cells, improving response to the treatment. This provides a strong rationale for using concurrent TTFields with CRT for patients with newly diagnosed and recurrent GBM. An international phase 3 randomized clinical trial to examine the efficacy of this strategy is underway, but the real-world outcomes of this strategy are not well-studied.



Glioblastoma is one of the most prevalent brain tumors, characterized by its aggressive nature and poor prognosis. This retrospective study compared two patient groups: chemoradiation therapy with and without TTFields. The researchers found no significant

To this end, Dr. Zhiyong Qin and Dr. Yang Wang from Fudan University, China, collaborated with researchers from Shanghai Gamma Hospital, China; Sidney Kimmel Cancer Center, USA; Fudan University Cancer Hospital, China; and Shanxi Academy of Medical Sciences, China, to conduct a retrospective study examining the clinical outcomes of concurrent TTFIELDS therapy with CRT in patients with newly diagnosed GBM (ndGBM). Their findings were published in the [Chinese Neurosurgical Journal](#) on March 7, 2025.

This study included patients who underwent radiation therapy and TTFIELDS at Huashan Hospital, China, between January 2020 and December 2021. "Patients were categorized into two groups: one group received adjuvant TTFIELDS therapy after completing CRT (referred to as the A-TTF group), while the other received TTFIELDS therapy concurrently with CRT and continued TTFIELDS after treatment (referred to as the CA-TTF group)," explains Dr. Qin. Out of the 72 patients included in this retrospective study, 41 belonged to the CA-TTF group, and 31 were part of the A-TTF group.

The researchers compared the efficacy and toxicity of the treatment modalities between the CA-TTF and A-TTF groups. They found no significant difference in the median PFS and OS between the two treatment groups. The PFS and OS for the CA-TTF group were 14.2 months and 20.8 months, respectively, whereas for the A-TTF group, the PFS and OS were 15 months and 20 months, respectively. Dr. Wang explains, "After adjusting for baseline characteristics, the hazard ratios (HRs) for PFS and OS suggested a potential benefit for concurrent TTFIELDS therapy, although the differences were not statistically significant," suggesting that further investigations may be necessary to confirm the above observation. The researchers also studied the distribution of relevant molecular markers, like MGMT promoter methylation status and TERT promoter mutation status, between the two treatment groups. Earlier studies have shown that MGMT promoter methylation is associated with a better prognosis, whereas higher mutations in the TERT promoter can result in poorer prognosis. In this study, the survival outcomes for patients with methylations at the MGMT promoter was better in both CA-TTF and A-TTF groups. However, TERT promoter mutations were more prevalent in the CA-TTF group than in the A-TTF group. Despite this, these patients achieved comparable survival outcomes as the patients in the A-TTF group.

Skin-related adverse effects (AEs), such as dermatitis, pruritus, electric sensation, and skin burning sensation, were observed and graded along with the survival outcomes of patients. Mild scalp irritation was reported in 55 to 60% of the patients. Dermatitis was the most common skin-related AE, while pruritus was the second most common in this patient population. Electric sensation and burning sensation were rarely reported by these patients. Overall, the researchers found no significant difference in skin toxicity between the CA-TTF and A-TTF groups.

This study is the first real-world analysis of the advantages of concurrent TTFIELDS therapy combined with CRT in patients with ndGBM. Dr. Qin and Dr. Wang conclude, "Our findings suggest that TTFIELDS, when used concurrently with CRT, could maintain a favorable safety profile, with no significant differences observed in survival outcomes compared to adjuvant

therapy (A-TTF group).”

To summarize, TTFields used concurrently with CRT has the potential to improve survival outcomes for patients with ndGBM.

About the University

Fudan University was established in 1905 as Fudan Public School. Fudan University is a comprehensive research-oriented university located in Shanghai, China. Fudan combines liberal education with cultivation of eminent talents through a proactive exploration of a new system that boasts of disciplinary intersection and integration and coordinates innovation and cultivation in scientific research. The University strives for a world-class undergraduate education and a postgraduate educational system with international influence, both of which inject continual vitality into the hundred-year-old institution.

Website: <https://www.fudan.edu.cn/en/>

About Dr. Zhiyong Qin from Fudan University

Zhiyong Qin born in China, in 1969. He received the Ph.D. degree in neurosurgery from Fudan University, Shanghai, China, in 2000. He is currently a Professor with the Department of Neurosurgery, Huashan Hospital, Fudan University. His research focuses on developing comprehensive treatment plans for brain tumors, encompassing surgical intervention, individualized therapies, and physiotherapy approaches.

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