In Canada, physicians can request access to medical devices prior to their regulatory approval either for emergency use, or for early use in clinical trials. The Targeted Therapy Field (TTF) therapy has demonstrated improved overall survival (OS) and progression-free survival in recurrent glioblastoma (rGBM). TTF therapy (NovoTTF-1a) is a novel, non-invasive, and non-invasive method of glioblastoma (GBM) treatment with a unique mechanism of action (TMZ) that involves the delivery of electric fields to disrupt cancer cell function. The therapy is delivered via a portable device that can be worn by the patient at home. The device is called the NovoTTF-200A, and it generates electric fields of a specific frequency that target glioblastoma cells. The therapy is administered in an outpatient setting, and patients can continue with their daily activities while receiving treatment.

PATIENTS AND METHODS

Patients in Canada with GBM or rGBM who received TTFields therapy as part of the SAP were evaluated to determine the outcomes of treatment. Results from phase II and III clinical trials were used to support the use of TTFields therapy.

RESULTS

Demographics and baseline characteristics

- Overall, 62 patients received TTFields therapy through the SAP between 2013 and 2022 (Figure 3A).
- Median age was 49 years (range: 16–75), and 76% of patients were male.
- Most patients (95%) had GBM (according to criteria used at the time of diagnosis).
- Median KPS score was 75% (range: 0–100).
- Most patients received TTFields therapy in the adjuvant ndGBM setting (n=41; 66.1%), vs 21 (33.9%) for rGBM.
- Of note, rates of SAEs reported for both TTFields monotherapy and in combination with TMZ were similar.

Adjuvant TTFields therapy for rGBM following chemo-radiation

- TTFields therapy was prescribed as an adjuvant therapy following chemo-radiation in 14 rGBM cases.
- Adjuvant TTFields therapy was started a median of 29 days (range 4–131) after completion of chemotherapy/radiation.
- At the time of data capture, average estimated time on TTFields therapy was 30.6 weeks (7–75 months), with 17 patients still receiving adjuvant TTFields therapy.
- For patients who received TTFields therapy, overall survival was 63.5%.
- Overall, 16 patients were evaluable for safety and efficacy. 7 (43.8%) were localised skin irritation, 2 (12.5%) were alopecia, 1 (6.3%) was treatment not tolerated and 1 (6.3%) was unspecified.
- Median OS in the adjuvant setting was 15.4 months (Figure 4).

CONCLUSION

- TTFields therapy is well tolerated, as demonstrated by the results of this analysis of patients who received the treatment under the Health Canada SAP.
- Of note, rates of SAEs reported for both rGBM and GBM were significantly lower than those reported previously.
- By using sponsor-sponsored Device Support Specialists, it was possible to offer TTFields therapy to patients across a wide geographic area.
- Treatment with TTFields therapy would be more easily integrated into standard of care with the development of a larger network of prescribers.

Acknowledgements

Thanks to Carole Brabant for her help in data collection. Writing and editorial support was provided by Melissa Purves-Martinez and Melissa Purves, PhD, ISMPP CMPP. UK. Writing and editorial support provided by Mrs. Ayesha Kumar and Melissa Purves, PhD, ISMPP CMPP of France, UK. Writing and editorial support provided by Mrs. Ayesha Kumar and Melissa Purves, PhD, ISMPP CMPP of France, UK.

References


For further information, please contact: Prof. David Roberge at david.roberge.med@umontreal.ca

Presented at the 2023 Canadian Association of Radiation Oncology-Canadian Organization of Medical Physicists Joint Scientific Meeting, September 20–23, 2023, Montreal, Canada.