

ABSTRACT

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Concurrent chemoradiation and Tumor Treating Fields (TTFields, 200 kHz) for patients with newly diagnosed glioblastoma: patterns of progression in a single institution pilot study.

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Current standard of care for glioblastoma (GBM) includes concurrent chemoradiation and maintenance temozolomide (TMZ) with Tumor Treating Fields (TTFields). Preclinical studies suggest TTFields and radiation treatment have synergistic effects. We conducted a pilot clinical trial of concurrent chemoradiation with TTFields and report pattern of progression.

MATERIALS AND METHODS: This is a single arm pilot study (clinicaltrials.gov Identifier: NCT03477110). Adult patients (age ≥ 18 years) with KPS ≥ 60 with newly diagnosed GBM were eligible. All patients received concurrent scalp-sparing radiation (60 Gy in 30 fractions), standard concurrent TMZ and TTFields. Maintenance therapy included standard TMZ and continuation of TTFields. Radiation treatment was delivered through TTFields arrays. Incidence and location of progression was documented. Distant recurrence was defined as recurrence more than 2 cm from the primary enhancing lesion.

RESULTS: Thirty patients were enrolled on the trial. Twenty were male with median age 58 years (19-77 years). Median KPS was 90 (70-100). Median follow-up was 15.2 months (1.7-23.6 months). Ten (33.3%) patients had a methylated promoter status. Twenty-seven patients (90%) had progression, with median PFS of 9.3 months (range 8.5 to 11.6 months). Six patients presented with distant recurrence, with median distance from primary lesion of 5.05 cm (2.26-6.95 cm). One infratentorial progression was noted.

CONCLUSIONS: We observed improved local control using concurrent chemoradiation with TTFields for patients with newly diagnosed when compared to historical controls. Further data are needed to validate this finding.

TRIAL REGISTRATION: Clinicaltrials.gov Identifier NCT03477110.

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