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Hypo-fractionated accelerated radiotherapy with concurrent and maintenance temozolomide in newly diagnosed glioblastoma: updated results from phase II HART-GBM trial

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Abstract

Background: Glioblastoma (GBM) patients have poor survival outcomes despite treatment advances and most recurrences occur within the radiation field. Survival outcomes after dose escalation through hypofractionated accelerated RT(HART) were evaluated in this study. We previously reported the study's initial results showing similar survival outcomes with acceptable toxicities. Updated results after 5 years are being analysed to determine long-term survival trends.

Patients and methods: 89 patients of newly diagnosed GBM after surgery were randomized to conventional radiotherapy (CRT) or HART. CRT arm received adjuvant RT 60 Gy in 30 fractions over 6 weeks and the HART arm received 60 Gy in 20 fractions over 4 weeks, both with concurrent and adjuvant temozolomide.

Results: 83 patients were eligible for analysis. After a median follow-up of 18.9 months, the median OS was 26.5 months and 22.4 months in the HART and CRT arms respectively. 5 year OS was 18.4% in the HART arm versus 3.8% in the CRT arm. This numerical difference in overall survival between the two arms was not statistically significant. The median PFS was not significantly different.

Conclusion: The long-term results of the trial support HART as a promising treatment option with comparable survival outcomes to the current standard of care. Phase III trials are required for further validation of this regimen which has the potential to become the new standard of care in GBM.

Keywords: Accelerated radiotherapy; Glioblastoma; Hypo-fractionated radiotherapy; Surgery; Temozolomide.

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