Potential predictive biomarker for response to radiotherapy and CXCL12-inhibition in glioblastoma in the phase II/II GLORIA trial.

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Objective

The aim of this study was to evaluate the effect of the CXCL12 inhibitor NOX-A12 in combination with radiotherapy (RT) in patients with recurrent glioblastoma (GBM).

Methods

The single-center, randomized, open-label phase II/II GLORIA trial included 220 patients with recurrent GBM who were randomized to receive NOX-A12 (n=111) or placebo (n=109) in combination with SOC. The primary endpoints were overall survival (OS) and progression-free survival (PFS). Secondary endpoints included treatment-related adverse events (AEs), pharmacokinetics, tumor response, and expression of CXCL12 in tumor samples.

Results

The median OS of the GLORIA cohort was 338 days (range: 100-500 days) and the median PFS was 410 days (range: 0-500 days). The incidence of grade 3 and 4 AEs was lower in the NOX-A12 group compared to the placebo group. The frequency of CXCL12+ endothelial cells (E12) and CXCL12+ glioma cells (G12) was higher in the NOX-A12 group compared to the placebo group. The correlation between CXCL12+ cell density and PFS was statistically significant (rs = 0.409, p = 0.005).

Conclusion

The combination of NOX-A12 with RT in recurrent GBM shows promising clinical activity with a potential predictive biomarker for response to therapy. Further studies are needed to confirm these findings.