The prognostic improvement of add-on bevacizumab for progressive disease during concomitant temozolomide and radiation therapy in the patients with glioblastoma and anaplastic astrocytoma.


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BACKGROUND: Although newly diagnosed high-grade glioma patients in Japan can receive bevacizumab (BEV) as first-line chemotherapy, randomized clinical trials have not shown a survival benefit for BEV for these patients. In this study, we investigated whether selective add-on BEV for patients with newly diagnosed glioblastoma (GBM) and anaplastic astrocytoma (AA) improves prognosis, in cases where tumors were continuously growing during radiotherapy concomitant with temozolomide (TMZ).

METHODS: We conducted a retrospective survey of the overall survival (OS) of patients with GBM/AAAs who were treated in our institution between 2006 and 2016. Patients whose tumors were continuously growing regardless of radiotherapy were categorized as the "progressive" group; remaining patients were categorized as the "non-progressive" group. Since 2013, patients in the "progressive" group received add-on BEV therapy with the Stupp regimen during or just after radiotherapy.

RESULTS: Of 151 GBM/AA patients, 34 (22.5%) were categorized in the "progressive" group. Median OSs of the "progressive" and "non-progressive" groups were 13.2 months and 25.3 months, respectively (P < 0.001). Twelve patients in the "progressive" group received add-on BEV therapy, and their median OS was 20.2 months; whereas for the remaining 22 patients in the "progressive" group who were treated before the BEV era, their median OS was 10.5 months. In the "progressive" group, add-on BEV significantly extended OS (P = 0.018) and was the lone clinical factor of better prognosis.

CONCLUSIONS: We found that, for patients with GBM/AAAs whose tumors were continuously growing during radiotherapy, add-on BEV treatment resulted in survival benefits.

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