ABSTRACT

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Changes in the Relapse Pattern and Prognosis of Glioblastoma After Approval of First-Line Bevacizumab: A Single-Center Retrospective Study.

Funakoshi Y(1), Takigawa K(1), Hata N(2), Kuga D(1), Hatae R(1), Sangatsuda Y(1), Fujioka Y(1), Otsuji R(1), Sako A(1), Yoshitake T(3), Togao O(3), Hiwatashi A(3), Iwaki T(4), Mizoguchi M(1), Yoshimoto K(1).

Author information:
(1)Department of Neurosurgery, Graduate School of Medical Sciences, Kyushu University, Maidashi, Higashi-Ku, Fukuoka, Japan.
(2)Department of Neurosurgery, Graduate School of Medical Sciences, Kyushu University, Maidashi, Higashi-Ku, Fukuoka, Japan. Electronic address: hata.nobuhiro.874@m.kyushu-u.ac.jp.
(3)Department of Clinical Radiology, Graduate School of Medical Sciences, Kyushu University, Maidashi, Higashi-Ku, Fukuoka, Japan.
(4)Department of Neuropathology, Graduate School of Medical Sciences, Kyushu University, Maidashi, Higashi-Ku, Fukuoka, Japan.

BACKGROUND: Controversies exist regarding the aggressive recurrence of glioblastoma after bevacizumab treatment. We analyzed the clinical impact of bevacizumab approval in Japan by evaluating the clinical course and relapse pattern in patients with glioblastoma.

METHODS: We included 100 patients with IDH-wild-type glioblastoma from September 2006 to February 2018 in our institution. The patients were classified into the pre-bevacizumab (n = 51) and post-bevacizumab (n = 49) groups. Overall, progression-free, deterioration-free, and postprogression survivals were compared. We analyzed the relapse pattern of 72 patients, whose radiographic progressions were evaluated.

RESULTS: Significant improvement in progression-free (pre-bevacizumab, 7.5 months; post-bevacizumab, 9.9 months; P = 0.0153) and deterioration-free (pre-bevacizumab, 8.5 months; post-bevacizumab, 13.8 months; P = 0.0046) survivals was seen. These survival prolongations were strongly correlated (r: 0.91, P < 0.0001). The nonenhancing tumor pattern was novel in the post-bevacizumab era (5 of 33). The presence of a nonenhancing tumor did not indicate poor postprogression survival (hazard ratio: 0.82 [0.26-2.62], P = 0.7377). The rate of early focal recurrence was significantly lower (P = 0.0155) in the post-bevacizumab (4 of 33) than in the pre-bevacizumab (18 of 39) era. There was a significant decrease in early focal recurrence after approval of bevacizumab in patients with unresectable tumors (P = 0.0110). The treatment era was significantly correlated with a decreased rate of early focal recurrence (P = 0.0021, univariate analysis; P = 0.0144, multivariate analysis).

CONCLUSIONS: Approval of first-line bevacizumab in Japan for unresectable tumors may prevent early progression and clinical deterioration of glioblastoma without worsening the clinical course after relapse.

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