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Neurocognitive function in patients with recurrent glioblastoma treated with bevacizumab.

Wefel JS, Cloughesy T, Zazzali JL, Zheng M, Prados M, Wen PY, Mikkelsen T, Schiff D, Abrey LE, Yung WK, Paleologos N, Nicholas MK, Jensen R, Vredenburgh J, Das A, Friedman HS.

Department of Neuro-Oncology, The University of Texas MD Anderson Cancer Center, Houston, Texas (J.S.W., W.K.A.Y.), Department of Neurology, University of California Los Angeles School of Medicine, Los Angeles, California (T.C.), Genentech, Inc., San Francisco, California (J.L.Z., M.Z., A.D.), Department of Neurosurgery, University of California San Francisco, San Francisco, California (M.P.), Center for Neuro-Oncology, Dana-Farber/Brigham and Women's Cancer Center, Boston, Massachusetts (P.Y.W.), Hermelin Brain Tumor Center, Henry Ford Hospital, Detroit, Michigan (T.M.), Department of Neurology, University of Virginia, Charlottesville, Virginia (D.S.), Department of Neurology, Memorial Sloan-Kettering Cancer Center, New York, New York (L.E.A.), Department of Neurology, NorthShore University HealthSystem, Evanston, Illinois (N.P.), Department of Neurology, University of Chicago, Chicago, Illinois (M.K.N.), Huntsman Cancer Institute, University of Utah, Salt Lake City, Utah (R.J.), The Preston Robert Tisch Brain Tumor Center at Duke, Duke University Medical Center, Durham, North Carolina (J.V., H.S.F.).

Abstract

Neurocognitive decline is a frequent adverse effect of glioblastoma. Antitumor therapies that are efficacious, as measured by traditional endpoints such as objective response (OR) and progression-free survival (PFS), and have beneficial effects on neurocognitive function (NCF) are of clinical benefit to these patients. We evaluated neurocognitive changes across time in 167 patients with recurrent glioblastoma treated with bevacizumab-based therapy in BRAIN, a phase II, randomized, multicenter trial. All patients underwent MRI and neurocognitive testing at baseline and every 6 weeks thereafter. Memory, visuomotor scanning speed, and executive function were evaluated using the Hopkins Verbal Learning Test-Revised, the Trail Making Test, and the Controlled Oral Word Association test, respectively. NCF relative to baseline for patients with an OR, PFS >6 months, or disease progression was evaluated at time of OR, 24 weeks, and time of progression, respectively. For patients with an OR or PFS >6 months, median standardized test scores were examined from baseline to week 24. Most patients with an OR or PFS >6 months had poorer NCF performance compared to the general population at baseline and had improved or stable NCF at the time of response or at the 24-week assessment, respectively; most patients with progressive disease had neurocognitive decline at the time of progression. For patients with an OR or PFS >6 months, median standardized test scores were largely stable across the first 24 weeks on study. Neurocognitive testing was an objective, valid, and feasible method of monitoring NCF in patients with recurrent glioblastoma.

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