

Quality of life (QOL) and cognitive performance among irradiated brain cancer patients.

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Abstract:

Background: Cognitive symptoms are reported among cancer patients following treatment. QOL can be affected by cognitive problems, treatment-related fatigue and other symptoms. We examined the relationship between cognitive performance and the QOL of brain cancer patients, after adjusting for fatigue, demographic and clinical characteristics. **Methods:** Baseline data were analyzed from 82 participants of a phase III trial of the acetylcholinesterase inhibitor, donepezil, following whole or partial brain irradiation at least 6 months prior to initial QOL and cognitive testing. Multiple regression analyses were used to examine the association of demographic variables (age, education, sex, race), diagnosis (primary vs. metastatic), ECOG performance status (PS) (0-2), fatigue (FACIT-Fatigue subscale), and a cognitive performance composite score (CSS) (comprised of the Controlled Oral Word Association Test, Hopkins Verbal Learning Test-Revised, Digit Span Test, Trail Making Test, Grooved Pegboard) on QOL, measured by the Fact-Brain (FACT-Br) total score. **Results:** Patients had a mean age of 52 (range 19-85), half were male (50%), and 83% had \geq a high school education. ECOG PS was predominantly 0 (51%) or 1 (41%), and 37% had metastatic disease. In regression analyses predicting the FACT-Br total score, better cognitive performance (CSS) predicted higher QOL ($p=.01$), and fatigue predicted lower QOL ($p<0.0001$). Age ($p=0.36$), sex ($p=0.16$), education ($p=0.22$), race ($p=0.94$), diagnosis ($p=0.70$), and ECOG PS ($p=0.96$), were not significant predictors of QOL. In subanalyses further exploring the relationship between the Fact-Br subdomains (social, emotional, functional, physical, brain symptoms) and the CSS, only the brain symptoms subscale was related to poorer cognitive performance. **Conclusions:** Among brain cancer patients who had undergone brain irradiation at least 6 months prior to cognitive

testing, cognitive performance was significantly associated with patients' self-reported brain symptoms, but no other domains of QOL. Fatigue was significantly associated with poorer QOL. Interventions to improve cognitive functioning and decrease fatigue may improve the QOL of irradiated brain cancer survivors.