(P05) MULTIPLE SCLEROSIS: TYSABRI-SPECIFIC EFFECTS ON COGNITIVE FUNCTION

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Background: The cognitive effects of natalizumab treatment compared with those of other disease-modifying therapies (DMTs) are not well described. Objectives: Evaluate cognitive function with natalizumab compared with other DMTs.

Methods: Forty-six natalizumab patients (mean ± SD age, 43.2 ± 9.1 years; mean education, 15.1 ± 2.5 years; 76% female; mean intertest interval, 14.9 ± 3.9 months; mean Expanded Disability Status Scale [EDSS] score, 3.8 ± 2.2; disease duration: <5 years, 9%; 5–10 years, 50%; >10 years, 41%) were tested with a 30- to 60-minute computerized cognitive assessment battery for mild impairment (Mindstreams, NeuroTrax Corp, NJ) once prior to or early in treatment (0–3 infusions) and again after extended treatment (>9 infusions). Thirty-seven comparison patients (mean age, 45.8 ± 10.8 years; mean education, 14.9 ± 3.6 years; 78% female; mean intertest interval, 18.3 ± 5.0 months; mean EDSS score, 2.8 ± 1.8; disease duration: <5 years, 32%; 5–10 years, 43%; >10 years, 24%) were stable; Avonex (n = 10), Betaseron (n = 5), Rebif (n = 5), CombiRX (n = 5), Copaxone (n = 4), or no treatment (n = 8). Repeated-measures analysis of variance (ANOVA) was used to evaluate improvements: EDSS, age- and education-adjusted cognitive domain scores, and raw outcome parameters from individual tests. Cohen's d was computed as a measure of effect size. Given the directional hypothesis of improvement with treatment, P < .05 (1-tailed) was considered significant. Mixed-model ANOVA controlling for EDSS was used to evaluate the interaction between change over time and group. Results: Improvement was found in the natalizumab group (P = .04, d = 0.21) but not the comparison group (P = .15, d = 0.11) for memory domain, driven by verbal memory (natalizumab: .001 < P < .004; 0.43 < d < 0.55; comparison: .18 < P < .62; 0.02 < d < 0.14). Improvement was found in the natalizumab group (P = .005, d = 0.41) but not the comparison group (P = .31, d = 0.07) in verbal function, both for matching (natalizumab: P = .01, d = 0.38; comparison: P = .17, d = 0.20) and rhyming (natalizumab: P = .01, d = 0.45; comparison: P = .94, d = 0.01). A similar pattern was found for EDSS score improvement (natalizumab: P = .03, d = 0.11; comparison: P = .26, d = 0.05). For the cognitive measures above, interactions controlling for EDSS were near significant, except memory domain scores and delayed verbal memory accuracy. Conclusions: Natalizumab-specific treatment effects relate to improved language processing, including retrieval of newly learned verbal material.


Keywords: disease-modifying treatment in MS, CNS repair, symptomatic treatment of MS