
Owing to its neurotoxicity, allogeneic hematopoietic stem cell transplantation (HSCT) carries risks for cognitive impairment. In this multicenter study, we prospectively evaluated cognitive functioning and its medical and demographic correlates in patients undergoing allogeneic HSCT. A total of 102 patients were consecutively assessed prior to (T0), 100 ± 20 days (T1) after, and 12 ± 1 months (T2) after HSCT (61% men, 41% acute myeloid leukemia). A comprehensive neuropsychological test battery was applied to evaluate attention, memory, executive function, and fine motor function, summing up into 14 test scores. Before and after HSCT, patients performed below test norms in up to 50% of the test scores. Patients were mostly impaired on word fluency (24%, T0), fine motor function, and verbal delayed recall (19% each, T2). Impairment on 1/5 cognitive domains occurred in 47% (T0) and 41% (T2) of the patients. Performance (mean z-scores) partially improved over time (i.e., visual span forward, verbal learning, and word fluency). However, from baseline to T2, 16% of the patients showed reliable decline on 3/14 test scores (reliable change index method). For the majority of neuropsychological
subtests, no associations with conditioning intensity, total body irradiation, graft-versus-host disease, cyclosporine treatment, and length of hospital stay were found. Age and premorbid intelligence level were consistently associated with cognition. Below average cognitive performance is common in this patient group. In addition, a subgroup shows reliable cognitive decline after allogeneic HSCT. Healthcare professionals should be aware of these treatment-related cognitive side effects. Copyright © 2012 John Wiley & Sons, Ltd.

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