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PERSONALITY CHANGES IN BRAIN INJURY

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Abstract

Traumatic brain injury (TBI) is frequently complicated by alterations in mood and behaviour and changes in personality. We report mild personality changes post-TBI as a possible indicator of traumatic brain injury, but not of injury severity or psychiatric complications.

Traumatic brain injury (TBI) is frequently complicated by alterations in mood and behaviour as well as a 3-fold increased prevalence of personality disorders post-TBI¹. We present preliminary data from an ongoing study on personality traits pre and post-TBI. Patients with first-time closed head injuries were recruited from the trauma unit of the Johns Hopkins Hospital and the Brain Injury unit of Kernan Hospital, University of Maryland (Baltimore, MD). Participants were evaluated twice: initially within the first 3 months of TBI and 12 months post-TBI. The personality profile was captured using the 60-item abbreviated version of the NEO Personality Inventory (NEO-PI-R) called the NEO Five-Factor Inventory (NEO-FFI)². Raw scores of the NEO-PI-R were transformed to percentile scores using published norms for age and gender³. In order to evaluate pre-TBI (i.e., “premorbid”) personality characteristics, at the baseline visit the friend or family member was instructed to report retrospectively on the participant’s personality traits as observed pre-TBI (reported in the Table as “Baseline”). *T-test* for paired samples was conducted to examine the differences between baseline and 12-month personality scores. Multilinear regression analysis was conducted to assess correlates of personality traits, controlling for baseline NEO-PI-R factor score

There were a total of 41 who completed the NEO-PI-R profiles at baseline and 12 months. Extraversion and Openness decreased from baseline (reflecting pre-TBI traits) to 12 months. The changes were small in magnitude with percentile decreases of 10.9 points for Extraversion and 5.1 points for Openness. After correcting for multiple comparisons, there were no statistically significant associations between post-TBI personality traits and baseline clinical variables including age, gender, living situation, employment, race, education, presence of frontotemporal lesion (as assessed by computerized tomography scans), Lawton Activities of Daily Living Scale, Glasgow Coma Scale score, as well as the presence of any psychiatric diagnosis post-TBI including substance abuse disorder, mood disorder, anxiety disorder, or personality change. These findings are similar to Kurtz et al⁴ who found stability of personality traits post-TBI. Our current results suggest that a relatively small change in personality traits post-TBI acts as a marker of traumatic brain injury and not injury severity or complications. We recommend that future research include better-powered studies of longer duration using personality assessments as close to the time of injury as

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possible and using more sensitive imaging methods including MR and diffusion tensor imaging.

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