

Study finds high prevalence of depression after traumatic brain injury

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During the year following hospitalization for a traumatic brain injury, a majority of patients experienced major depression, according to a study in the May 19 issue of *JAMA*, a theme issue on mental health.

Charles H. Bombardier, Ph.D., of the University of Washington School of Medicine, Seattle, presented the findings of the study at a *JAMA* media briefing on mental health.

"[Traumatic brain injury](#) (TBI) is a major cause of disability in the United States and a signature injury among wounded soldiers. Assessment and treatment of TBI typically focus on physical and cognitive impairments, yet psychological impairments represent significant causes of disability. Major [depressive disorder](#) (MDD) may be the most common and disabling psychiatric condition in individuals with TBI. Poorer [cognitive functioning](#), aggression and anxiety, greater functional disability, poorer recovery, higher rates of suicide attempts, and greater health care costs are thought to be associated with MDD after TBI," the authors write. Uncertainties exist about the rates, predictors, and outcomes of major depressive disorder among individuals with TBI.

Dr. Bombardier and colleagues conducted a study to determine the rate of MDD during the first year after TBI and also examined predictors of MDD, MDD-related co-existing illnesses and the relationship of MDD to quality-of-life outcomes. The study included 559 hospitalized adults with complicated mild to severe TBI, who were followed up by structured telephone interviews at months 1 through 6, 8, 10, and 12.

Depression and anxiety were gauged with Patient Health Questionnaire (PHQ) study measures, which were administered at each assessment, and the European Quality of Life measure was given at 12 months.

The researchers found that during the first year after TBI, 297 of 559 patients (53.1 percent) met criteria for MDD at least once (a rate of MDD that is about 8 times greater than would be expected in the general population). The authors add that because of incomplete data at each assessment time point, the rate and depression duration estimates are likely conservative.

Participants were mostly men injured in vehicular crashes who sustained complicated mild injuries. Point prevalences of MDD ranged between 31 percent at 1 month and 21 percent at 6 months. Risk of MDD after TBI was associated with MDD at the time of injury, history of MDD prior to injury (but not at the time of injury), age (individuals older than 60 years had a lower risk of MDD than those 18-29 years of age), and lifetime alcohol dependence.

Those with MDD also were more likely to report any co-existing anxiety disorders after TBI than those without MDD (60 percent vs. 7 percent). Only 44 percent of those with MDD received antidepressants or counseling. Also, MDD within the first year after TBI was associated with greater problems with mobility, usual activities, and pain/discomfort and greater difficulty with role functioning at 12 months after TBI. After adjusting for predictors of MDD, persons with MDD reported lower quality of life at 1 year compared with the nondepressed group.

The researchers write that several features of MDD after TBI are pertinent to future detection and treatment efforts, including the fact that about half of the patients who became depressed were identified by 3 months, suggesting a window of opportunity for early identification and

treatment or prevention efforts. They note that TBI survivors remained at risk of MDD throughout the first year regardless of pre-injury depression history, and that risk of post-TBI MDD probably persists beyond 1 year.

"Systematic integration of mental health services into standard care of patients with TBI may be needed to improve long-term outcomes after TBI. Within inpatient rehabilitation, integrated clinical pathways can be used to organize early identification, risk assessment, diagnosis, and guideline-driven treatment of MDD. Systematic depression screening and stepped-care treatment protocols should be integrated into routine outpatient care. For those without or beyond routine follow-up, novel case-finding programs may be useful, possibly via scheduled telephone contacts, Internet-based screening or other technology-assisted methods," the authors write.

More information: JAMA. 2010;303[19]:1938-1945.

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