
The impact of attention deficit hyperactivity disorder on recovery from mild traumatic brain injury

Christopher M. Bonfield, M.D., Sandi Lam, M.D., M.B.A., Yimo Lin, B.A., and Stephanie Greene, M.D.

Department of Neurosurgery, Children's Hospital of Pittsburgh, University of Pittsburgh, Pennsylvania; and 2Section of Neurosurgery, University of Chicago, Illinois

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OBJECT

Attention deficit hyperactivity disorder (ADHD) and traumatic brain injury (TBI) are significant independent public health concerns in the pediatric population. This study explores the impact of a premorbid diagnosis of ADHD on outcome following mild TBI.

METHODS

The charts of all patients with a diagnosis of mild closed head injury (CHI) and ADHD who were admitted to Children's Hospital of Pittsburgh between January 2003 and December 2010 were retrospectively reviewed after institutional review board approval was granted. Patient demographics, initial Glasgow Coma Scale (GCS) score, hospital course, and King's Outcome Scale for Childhood Head Injury (KOSCHI) score were recorded. The results were compared with a sample of age-matched controls admitted with a diagnosis of CHI without ADHD.

RESULTS

Forty-eight patients with mild CHI and ADHD, and 45 patients with mild CHI without ADHD were included in the statistical analysis. Mild TBI due to CHI was defined as an initial GCS score of 13–15. The ADHD group had a mean age of 12.2 years (range 6–17 years), and the control group had a mean age of 11.14 years (range 5–16 years). For patients with mild TBI who had ADHD, 25% were moderately disabled (KOSCHI Score 4b), and 56% had completely recovered (KOSCHI Score 5b) at follow-up. For patients with mild TBI without ADHD, 2% were moderately disabled and 84% had completely recovered at follow-up ($p < 0.01$). Patients with ADHD were statistically significantly more disabled after mild TBI than were control patients without ADHD, even when controlling for age, sex, initial GCS score, hospital length of stay, length of follow-up, mechanism of injury, and presence of other (extracranial) injury.

CONCLUSIONS

Patients who sustain mild TBIs in the setting of a premorbid diagnosis of ADHD are more likely to be moderately disabled by the injury than are patients without ADHD.