

Traumatic Brain Injury

Despite advances in the management of traumatic brain injury (TBI) during the last 2 decades, the rate of in-hospital mortality and average cost of hospitalization have increased significantly. This observation came from a comparison of data obtained in the Nationwide Inpatient Survey in 1993–1994 vs 2006–2007, explained Nizar Souayah, University of Medicine and Dentistry of New Jersey, Westfield, New Jersey. The number of admissions for adult TBI was 456,601 for 1993–1994 and 492,834 for 2006–2007. In-hospital deaths increased significantly during the more recent period compared to the earlier time period: 34,114 (6.9%) vs 25,392 (5.6%; $P < 0.0001$). The average cost of hospitalization (corrected for inflation rate) also increased significantly, from \$10,994 in 1993–1994 to \$25,228 in 2006–2007 ($P < 0.0001$). The investigators suggested that the increases in costs and death rate may have been related to greater vulnerability and more severe TBI among the patients treated in 2006–2007. This characterization was suggested by the fact that the 2006–2007 group was significantly older than the 1993–1994 group (average age 47.3 vs 36.5 years, respectively; $P < 0.0001$) and included a significantly higher percentage of patients on mechanical ventilation (17.4% vs 2.6%; $P < 0.0001$).

A simple measure of reaction time could allow sports-related concussions to be identified on a much more timely basis, according to a study presented

by James T. Eckner, University of Michigan Department of Physical Medicine and Rehabilitation, Ann Arbor, Michigan. Reaction time is known to be prolonged following concussion, but current assessment methods require computers and specialized software. To address the need for an economical, portable tool that might be used on the sidelines or in the training room soon after sports-related injury, Dr. Eckner and colleagues developed and standardized a clinical measure of reaction time (RTclin). This instrument was evaluated by obtaining baseline measures of RTclin in college athletes during their physical examinations prior to participation in varsity football, wrestling, or women's soccer at a single university. Those who subsequently suffered concussions (as diagnosed by a physician) underwent repeat RTclin testing within 72 hours of the injury. In 6 of 7 athletes who sustained concussions, the postinjury RTclin measurement was prolonged at 72 hours compared to baseline (mean, 218 ± 29 msec vs 198 ± 21 msec, respectively; effect size, 0.795). Dr. Eckner noted that these findings support the potential usefulness of RTclin as part of a multifaceted sport concussion assessment battery and added, "Because of its simplicity and low cost, RTclin may have its greatest applicability to youth athletes who are traditionally underserved with regard to concussion detection and management." ■