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Impact of medical and neurological ICU complications on moderate-severe traumatic brain injury (TBI)

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Presenter Information
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IMPACT OF MEDICAL AND NEUROLOGICAL ICU COMPLICATIONS ON MODERATE-SEVERE TRAUMATIC BRAIN INJURY (TBI)

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Abstract:

Certain admission characteristics are known predictors of adverse outcomes in patients with moderate-severe TBI, but explain only 1/3 of outcome variability. Intensive care unit (ICU) complications occur frequently in this population, but their impact on patient outcomes remains poorly defined. In a prospective observational cohort study of 170 consecutive moderate-severe TBI patients admitted to Level I trauma center (UMASS) over the period 11/2009–2/2012, we examined the association of ICU complications and 3-month outcome (Glasgow Outcome Scale [GOS]). The mean age was 51 years, 72% were men, and the median GCS and injury severity scores were 4 and 29, respectively. Using multiple logistic regression analysis, hypotension requiring vasopressors (HRV) was the strongest predictor of poor outcome (GOS 1-3 [OR 2.8; 95% CI 1-7.5]) among medical complications. After combining medical with neurological ICU complications, brain herniation (OR 5.8; 95% CI 1.1-30.2) and intracranial rebleeding (OR 2.9; 95% CI 1-8.4) were the strongest predictors of poor outcome, while HRV approached significance (OR 2.4; 95% CI 0.9-6.4). We identified important potentially modifiable predictors of adverse outcomes after moderate-severe TBI. Confirmation of our findings in a larger cohort is warranted.