

Matthew G. Johnson
L2
LSU Health Sciences Center, New Orleans, LA

Dr. Gregory Davis
LSUHSC Department of Emergency Medicine, Our Lady of the Lake Regional Medical Center

“Applicability of the Brain Injury Guidelines on patients transferred to a level 1 trauma center with traumatic brain injury”

Introduction: In the United States, an estimated 2.5 million people sustain serious traumatic brain injuries (TBIs) every year. These injuries can be life-threatening and may require neurosurgical intervention, a service which is not found at many healthcare facilities. The Brain Injury Guidelines (BIG) from the Tuscon group outline recommendations for patients with TBIs who can be medically managed safely without repeat imaging or neurosurgical consultation. The BIG do not include patients with a TBI who arrive as a transfer from another hospital; thus, this study explores whether or not the BIG can be safely applied to this population.

Methods: This study is a single-center retrospective chart review comparing outcomes of trauma patients with a blunt-force TBI seen in the emergency department arriving as a transfer from another healthcare facility versus non-transfer. The charts reviewed were from January 1st, 2017 through June, 2023. The included charts were from patients admitted to Our Lady of the Lake Regional Medical Center in Baton Rouge, Louisiana with a TBI. Excluded charts were those with a penetrating mechanism of injury, under the age of 18 years old, pregnant individuals, and prisoners. The primary outcomes of this study were mortality, progression on repeat head CT, progression on head CT with neurologic deterioration, and new management as a result of repeat head CT. The secondary outcomes of the study were intensive care unit length of stay and hospital length of stay.

Results: 516 charts were included in the final analysis. Median hospital length of stay was longer for patients who were not transferred at 4.00 days than for non-transferred patients at 3.00 days. The difference in mortality of patients was not statistically significant, nor was the rate of 30-day readmission secondary to TBI. Repeat CT in the ED outcomes show worsening or progression in 10 transfer patients compared to 3 non-transfer patients. Mortality in transfer patients is 24% higher compared to non-transfer patients yet not significant. Transfer patients showed more severe injuries compared to non-transferred patients. Repeat CT scans were worse in transfer patients.

Discussion: Transfer patients with TBIs do not have a significantly different mortality rate or median hospital length of stay compared to non-transferred patients. This suggests BIG can be safely applied to TBI transfer patients.