

Admission Disposition and Cost Savings for Mild Traumatic Brain Injury

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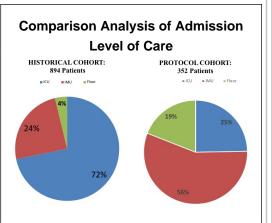
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Introduction

Mild traumatic brain injury (mTBI) is a common diagnosis requiring supportive care and observation. Frequently, these patients are admitted to an intensive care unit (ICU) or intermediate care unit (IMU) despite the rare occurrence of neurological deterioration and surgical intervention[1,2]. Intensive care only accounts for 10% of in-hospital beds but over 25% of acute care cost in the United States [3,4]. ICU admission may cause bed capacity issues and increased health care costs. This study investigates the safety and costefficiency of our novel mTBI admission protocol compared to historical controls.

Methods

From February 2016 through July 2017, 779 consecutive mTBI patients were admitted to our level 1 trauma center. Using the new protocol, patients were stratified into risk categories, and the admission location was determined. We recorded mortality, neurological morbidity, bed admission acuity, upgrades in level of care, and neurological readmission in 30 days. The bed acuity included ICU, IMU, and floor. A 2-year historical cohort was used as a comparison.



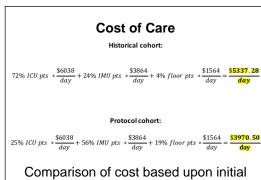
Historical cohort versus Prospective cohort admission disposition level of care

Results

Of the mTBI study cohort, 352 patients met our inclusion criteria, and the historical cohort had 917 patients. We had no mortalities in our study group. We observed 3 (< 0.01%) upgrades in level of care, all of which were not for neurological reasons. Neurological readmissions within 30 days occurred in 4 (0.02%) patients. The percentage of ICU admissions decreased significantly from 70% in the historical population to 24% (p-value < 0.001). The average cost of the first day of admission decreased from \$5,243 to \$3,750 (p-value < 0.001).

Conclusions

The data show that our new admission protocol does not compromise patient safety or outcome. This protocol decreased the ICU admissions as well as cost and may potentially decrease length of stay and incidence of medical complications related to ICU level of care.



hospital day level of care disposition in historical versus protocol cohort

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Discuss the increased costs and bedcapacity issues related to mTBI patients, 2) Describe the cost benefits of a novel mTBI protocol, and 3) Identify potential areas for further improvement in mTBI patient care without an increase in morbidity and mortality.

References

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