

BACKGROUND

Blunt trauma patients with cirrhosis are at elevated risk of traumatic brain injury (TBI).¹ Patients with TBI and cirrhosis suffer higher mortality.^{2,3} Correction of coagulopathy in cirrhotic patients with traumatic brain injury (TBI) remains challenging due to absence of well-defined, evidence-based management guidelines in this patient population.

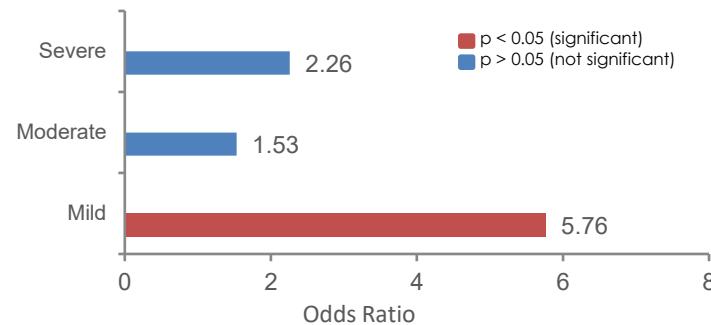
PURPOSE

This study aims to analyze mortality of cirrhotic patients with isolated TBI after administration of blood products.

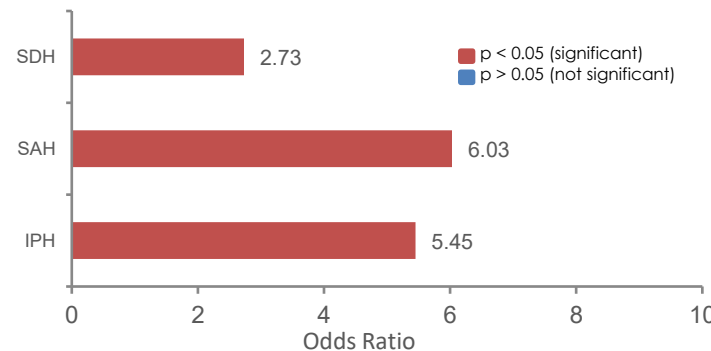
METHODS

- Retrospective cohort study using the ACS TQIP database (2020 – 2022) analyzing adult ICU patients with cirrhosis suffering an isolated TBI identified using ICD-10 codes.
- Patients who had Abbreviated Injury Scale (AIS) score greater than 2 for regions other than head, anticoagulant therapy, bleeding disorder, went to the operating room from the emergency department, were interfacility transfers, had prehospital cardiac arrest, or had intracranial pressure monitors were excluded.
- The primary outcome was mortality.
- Patients were stratified by type and severity of TBI.
- Multivariate regression analysis was performed to identify the effect of receiving blood components on mortality.

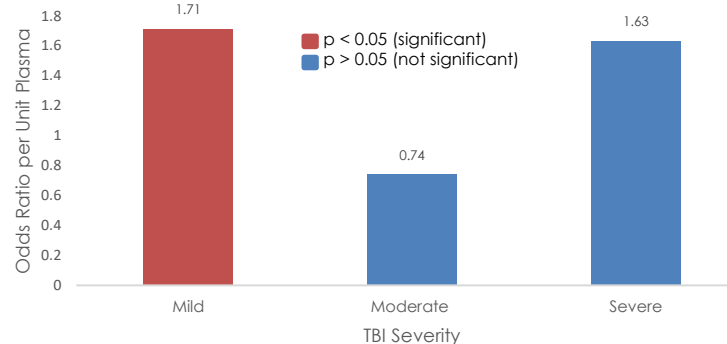
Plasma Effect on Mortality by TBI Severity



Plasma Effect on Mortality by TBI Type



Mortality per Unit of Plasma by TBI Severity



RESULTS

- 1,405 patients met inclusion criteria. The mean age was 60.4 years. 66.8% were male. The majority of patients had a mild TBI (76.0%), followed by severe TBI (15.4%), and moderate TBI (8.6%)
- SDH (71.9%) was the most common, followed by SAH (51.4%), IPH (33.5%), and EDH (3.1%)
- Blood transfusion was rare with 3.8% receiving pRBC, 4.1% plasma, 5.8% platelets, 0.2% cryoprecipitate and 0.3% whole blood
- The overall mortality rate was 20.2%.
- On multivariate regression controlling for type of TBI, mild TBI patients had a higher mortality associated with plasma transfusion (OR = 5.76, p = 0.002) and had an increased mortality with each unit plasma received (OR = 1.71, p = 0.046).
- There was no significant association with mortality in moderate or severe TBI patients when receiving transfusions
- When stratifying by subtypes of TBI, the increased mortality persisted in SDH (OR = 2.75, p = 0.017), SAH (OR = 6.03, p = 0.001), and IPH (OR = 5.45, p = 0.016)

CONCLUSIONS

Plasma administration in cirrhotic patients with isolated mild TBI may be an indicator of poor prognosis. Plasma transfusion in this patient population was associated with increase mortality and persisted in a dose-response analysis. The effect was seen in multiple subtypes of TBI

REFERENCES

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