

Category : **Brain: head trauma**

A181 - Treatment following intracranial pressure monitoring improves outcome but extends the length of stay: a retrospective analysis of a single center

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Introduction:

Traumatic brain injury (TBI) is the leading cause of mortality and morbidity in children and young adults in both developed and developing nations worldwide.

The severity of the head trauma TBI is assessed using the GCS score and it is classified as: sSevere ≤ 8 , mModerate 9-13, mMild ≥ 14 .

Treatments include: antiepileptic prophylaxis, management of intracranial hypertension in order to maintain cerebral perfusion pressure and ensuring adequate oxygen delivery.

The use of intracranial pressure (ICP) monitoring has been postulated to be beneficial in patients with severe TBI, although studies investigating this hypothesis have reported conflicting results.

The objective of this study is to compare the mortality of the patients treated following ICP monitoring.

Methods:

We retrospectively analyzed all the patients admitted to our ICU between January 2018 and June 2023. We collected the following variables: gender, age, pre-intubation GCS, whether they underwent neurosurgical decompressive craniotomy, ICP monitoring, AEDs and EEG results, length of stay (LoS) and outcome. For statistical analysis Mann-Whitney-U test was used for comparing medians and Fisher's test for group comparisons.

Results:

We included 453 patients, 338 (74%) were male. Median age was 58 [37; 75] years and a median pre-intubation GCS of 8 [6; 13]. 165 (36%) patients have isolated TBI, 133 (29%) had ICP monitoring.

The median days of LoS of the patients with ICP monitoring was higher than in the ones without ICP monitoring (14 [8; 22] vs 8 [4; 13], $p < 0,05$) but there is a reduction in mortality with odds ratio of 2,11 (95% IC: 0,97, 5,12) [Table 1]. The same results are obtained by considering the population with $GCS \leq 8$.

Conclusion:

Our study highlights the effectiveness of ICP monitoring in TBI, demonstrating an improvement in clinical outcome despite an extended LoS and possible mortality reduction. These findings emphasize the importance of considering ICP monitoring as pivotal intervention especially in severe TBI management.

Table:

	ICP Monitoring	No ICP Monitoring	p-value
Discharged from ICU	123	264	<0,05
Dead	9	41	

Patient's outcome: comparison between ICP monitoring and No ICP Monitoring.