Traumatic Brain Injury in a single-center university hospital in Portugal

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Introduction

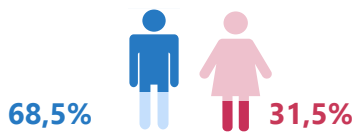
This study aims to unravel the mechanisms underlying neurological damage in patients with traumatic brain injury(TBI) as well as treatment strategies and prognostic factors.

Methods

We conducted a single-center, retrospective and prospective cohort study of adult patients admitted with TBI to a Neurocritical Intensive Care Unit(ICU). Data from patients with TBI were extracted from medical records over a six-year period

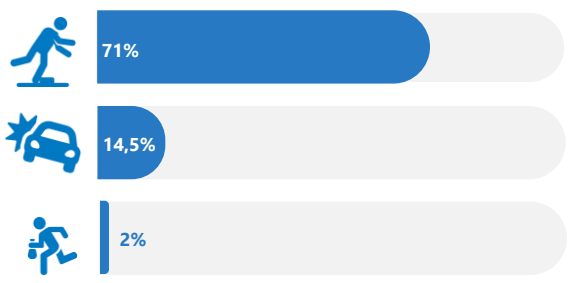
Results

200 patients were included with a median age of 67 years (IQR 44-77,75), 68,5% of which were male.

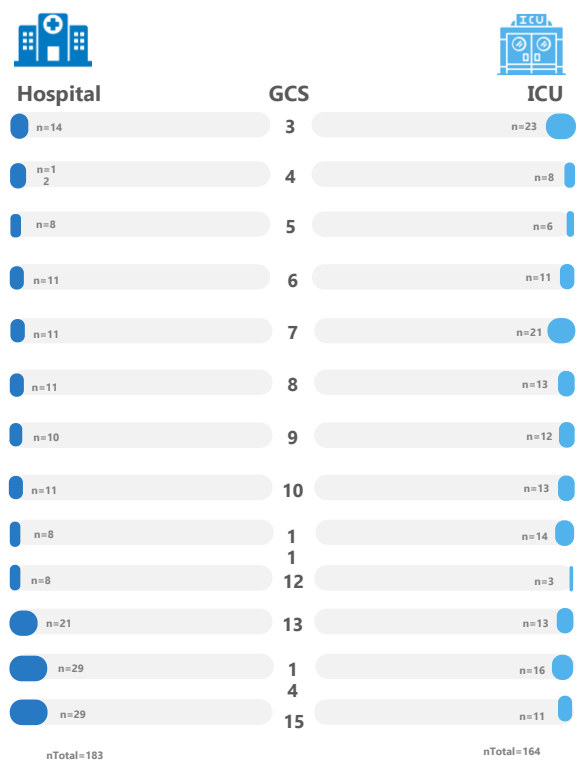


18,5% were on antiplatelet therapy and 19,5% with an anticoagulant.

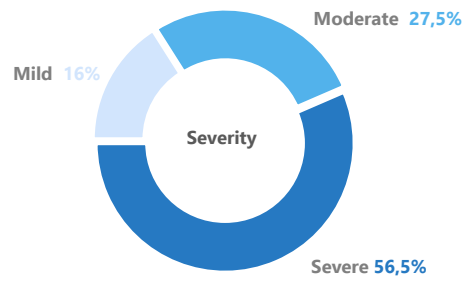
The leading causes of TBI were falls (71%), motor vehicle crash (14,5%) and assault(2%).



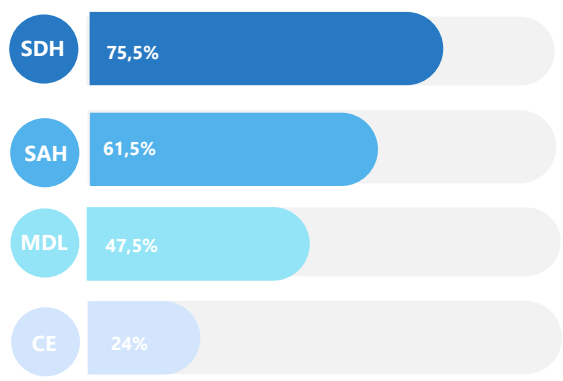
Upon hospital admission, the median Glasgow Coma Scale (GCS) score was 11 points (IQR 7-14), whereas at ICU admission It was 8,5 points (IQR 6-12).



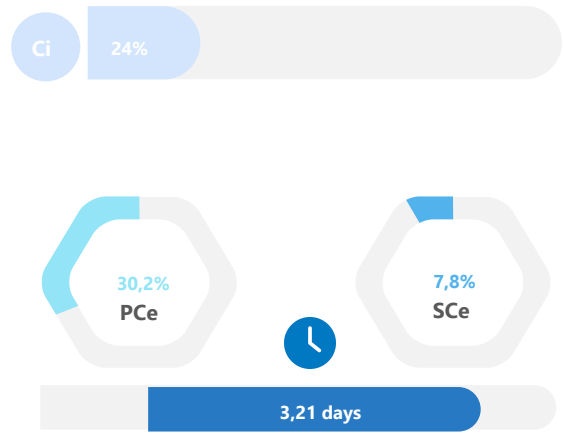
In terms of clinical classification of TBI severity (Glasgow Coma Scale), 16% of patients were classified as mild, 27,5% as moderate and 56,5% as severe cases.



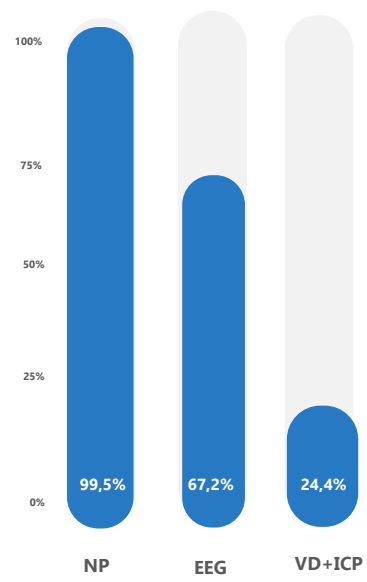
According to neuroimaging, 75,5% cases were of subdural hematoma (SDH),61,5% of subarachnoid hemorrhage(SAH). Also, 47,5% presented with middle line deviation(MLD) and 24% with cerebral edema(CE).



Intervention-wise, 30,2% of patients were submitted to a primary craniectomy(PCe), 27,1% to a craniotomy(Ci), and 7,8% to a secondary craniectomy(SCe), with an average timing of 3,21±2,32 days.

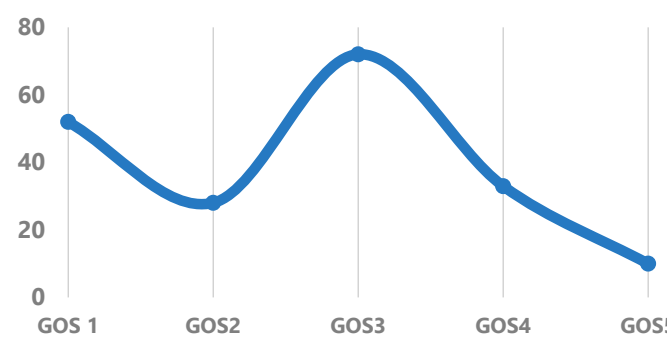


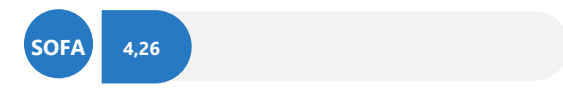
Regarding neuromodulation metrics, 99,5% of patients were under neuroprotective measures(NP), 67,2% were monitored with processed electroencephalogram (EEG), and 24,4% with both external ventricular drainage system and intracranial pressure monitoring(VD+ICP).



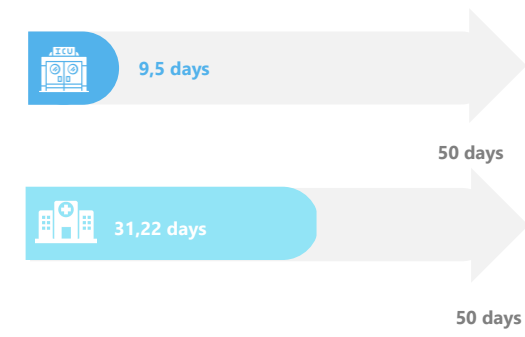
During the ICU stay, 23,5% developed seizures (S) and 17,5% progress with *status epilepticus (SE).*

As to morbidity, the mean Glasgow Outcome Scale at ICU discharge was 2,62 (IQR 1,00-3,00) with a Sequential Organ Failure Assessment(SOFA) score at this timepoint of 4,26 (IQR 1-6).

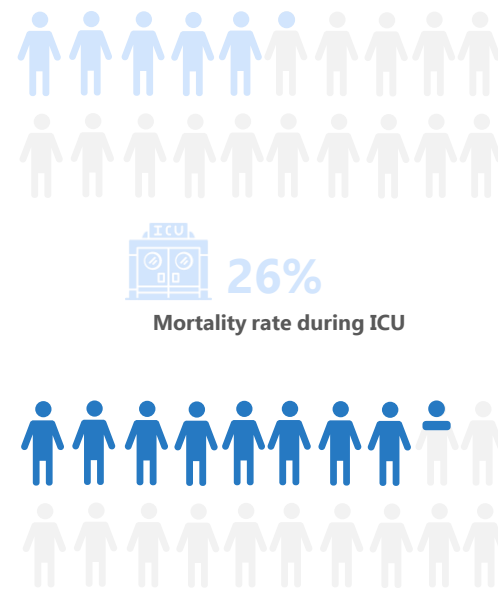




The mean ICU stay is 9,5±9,88 days and the mean hospital stay 31,22± 57,36 days.



The overall mortality rate during ICU stay was 26% and 40,5% at hospital discharge.



Conclusion

This analysis provides preliminary insights into TBI's epidemiological, clinical and prognostic aspects, informing evidence-based strategies *for effective management and prevention. Further research is warranted to clarify therapeutic strategies and enhance prognostic accuracy in this population.*