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000350

Dynamic effect of age and Systolic Blood Pressure on severe trauma patients prognosis

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Introduction: Systolic arterial blood pressure (SBP) increases with age. We aimed at testing the combination of SBP and age on mortality after trauma.
Methods: This retrospective Real World Evidence (RWE) monocentric study included all adult patients from a French level-1 trauma center. A Generalized Additive Model (GAM) was created to predict 30 day-mortality based on age and SBP. The gray zone technique served to determine SBP thresholds. Subgroup analysis focused on Injury Severity Score (ISS).
Results: Among 2655 patients, 717 (27%) were older than 50 yo. Median ISS was 13 [6 - 25], average mortality was 11.5% [10.3%; 12.7%]. Older patients had higher ISS, higher mortality (22% vs. 7%, $p < 0.001$); more so when ISS $\geq$ 26. Threshold effects on mortality appeared as SBP $\leq$ 90 mmHg, but none specific to ISS subsets. Risk appeared as SBP $\geq$ 130 mmHg, increased when combined with ISS $\geq$ 26, reduced with ISS $\leq$ 15. Computation led to no SBP threshold depending on age; in particular not 110 mmHg for 50 yo.
Conclusion: We confirmed the threshold of SBP below 90 mmHg, and effects above 130 mmHg with severe ISS. Older age and lower SBP combined increased mortality. Computation did not prove 110 mmHg should be used as a threshold for patients older than 50 yo.

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1. none

000363

Impact of frailty on traumatic brain injury outcome. Data from CENTER-TBI

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Introduction: Frailty can be defined as a multidimensional syndrome characterized by organic and functional impairments associated with a decrease in physiological reserves. Current evidence suggests that frailty is associated with unfavourable outcome among the geriatric population exposed to a stressor event. No information is available about the impact of frailty on long term outcomes in the subpopulation of TBI patients.
Objectives: The aim of our study is to create a reliable index to describe frailty among patients admitted to ICU with a diagnosis of TBI and to assess its association with the 6 months neurological outcome expressed in terms of Extended Glasgow Outcome Scale (GOSE<5) and mortality at 6 months.
Methods: The study was conducted using the data extracted from the CENTER-TBI database v2.1 with Neurobot v2.6. Patients' information were collected at ICU admission and used to build a frailty index (FI) as a compound of accumulated deficits. Thirty-five variables assessing health status at baseline were used to develop the FI. These features included chronic medical conditions, previous TBI, laboratory findings, number and type of drugs, alcohol or toxic agents abuse. For any subject, the FI was calculated as the sum of the reported deficits divided by the totality of evaluated items, expressed in percentage; FI (%) is related to an incremental factor of $\cong$2 points.
A Logistic regression model was performed to estimate the contribution of the FI to explain the 6-month outcomes and it was adjusted for the IMPACT core variables (i.e. age, pupillary reactivity and GCS motor). The model was also performed on the group of elderly subjects ($\geq$ 65 years old).
Results: 1754 participants were included in this study (n= 425 subjects $\geq$65 years old). The median age was 49 [IQR: 29; 65.75] and sex prevalence of males (72.6%). The median baseline value of the FI overall was 8.82 (I-III quartiles 3.44-14.71; range 0.00 to 54.54) and 14.82 (I-III quartiles 9.09- 23.33; range 0.00 to 42.8) considering the subset of elderly subjects.
Frailty significantly increased the risk of unfavourable GOSE at 6 months, with an odds ratio (OR) of 1.03 (95% CI 1.01–1.04, p-value <0.001) and also the risk of mortality, with an OR of 1.004 (95% CI 1.002-1.006, p-value =0.001). Considering only elderly subjects, there was no evidence that frailty increased the risk of unfavourable outcome (OR =1.03, 95% CI =0.99 - 1.08, p-value= 0.204) and mortality (OR = 1.001, 95% CI =0.997-1.006, p-value=0.541).
Conclusion: In this study we developed a FI for the specific application on TBI patients. This index was built from data collected from a large cohort of TBI patients characterized by a wide age spectrum. Our results indicated a significant increased risk of unfavourable neurologic outcomes in patients with high FI score, regardless of age and other IMPACT variables.

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Efficacy and Safety of Tranexamic Acid in Acute Traumatic Brain Injury: A Systematic Review and Meta-analysis of Randomized Controlled Trials

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