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EARLY POSTTRAUMATIC PREDICTION OF OUTCOME FOR MULTIPLE TRAUMA PATIENTS WITH SEVERE THORACIC TRAUMA

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INTRODUCTION: Blunt multiple trauma with severe thoracic trauma (BMTSTT) require multidisciplinary approach and involve different specialists not only on admission, but on secondary and tertiary surveys. Continuous evaluation of the patients´ status severity during early posttraumatic period is crucial for the triage, quality management, scientific study of trauma, assessment of mortality prediction, better coordination between all members of the trauma team and proper cooperation among levels of trauma care. The goal of this study was to build simple scales for outcome prediction in early posttraumatic period of BMTSTT.

METHODS: This single-center prospective observational cohort study was conducted on 73 male patients with BMTSTT (Age=20-68 years; ISS=18-57; AIS thorax=3-4; survival/non-survival=42/31) treated in department of anesthesiology and intensive care for patients with combined trauma of Kharkiv city clinical hospital of emergency aid named by prof. O.I. Meshchaninov. Examinations were performed on the 1st-2nd (11-34 hours), 3d-4th (48-75 hours) and 5th-6th (97-122 hours) days after trauma. Among 39 clinical and laboratory parameters 13 cut-off values were estimated with the help of ROC-analysis and were used for binary outcome evaluation according to the multivariate logistic regression analyses with backward elimination of categorical variables.

RESULTS: The probability of mortality can be determined with help of three simple scales: on the 1st-2nd day after trauma according to AIS head, RTS scores, hemoglobin, total protein (TP), urea and creatinine concentrations (AUROC=0.998±0.002, $p<0.0001$); on the 3d-4th day – AIS head, VPH-PMT scores, TP concentration and WBC, band neutrophils and lymphocytes counts (AUROC=0.992±0.007, $p<0.0001$); on the 5th-6th day – oxygen content, TP concentration and erythrocytes, monocytes, band neutrophils counts (AUROC=0.996±0.004, $p<0.0001$).

CONCLUSIONS: The individual risk of negative outcome for patients with BMTSTT can be reliably estimated through the first 5-6 days of post-traumatic period based on routine clinical and laboratory signs. The prognostic values of clinical and laboratory makers are different depending on the day of the posttraumatic period. Each day of the early posttraumatic period is characterized by own specific prognostic markers.

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FEIBA® REVERSAL FOR APIXABAN AND RIVAROXABAN IN INTRACRANIAL AND NONINTRACRANIAL HEMORRHAGE

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INTRODUCTION: The use of apixaban and rivaroxaban has steadily increased. Currently, FEIBA® has been used off-label for Factor Xa inhibitor reversal yet there are limited studies to support this practice. Therefore, additional safety and effectiveness data is needed for apixaban and rivaroxaban reversal in patients with an associated bleeding event.

METHODS: The following retrospective study evaluated patients who received at least one dose of FIEBA® for the reversal of apixaban or rivaroxaban. One hundred forty-seven patients with an acute major bleed were evaluated. The primary study outcome sought to determine the percentage of patients who achieved excellent or good hemostatic efficacy within 12 hours of FEIBA® administration. The primary safety outcomes assessed the percent of patients who experienced an inpatient adverse event defined by thromboembolism or mortality during hospital admission post-FEIBA® administration.

RESULTS: Among the 147 patients evaluated, 58 experienced an intracranial hemorrhage (ICH) and 89 experienced a non-ICH major bleeding event. Excellent or good hemostasis occurred in 115 (78%) patients from the total population. When evaluated based on site of bleeding event, excellent or good hemostasis occurred in 47 (81%) ICH patients and 68 (76.4%) non-ICH patients. In the total cohort, three patients (2%) experienced a thrombotic complication, and three patients (2%) had a hemorrhagic complication. A total of 15 patients (10%) experienced in-hospital mortality following FEIBA® administration.

CONCLUSIONS: This retrospective study supports the safety and effectiveness of FEIBA® for the management of acute bleeding events secondary to apixaban and rivaroxaban. FEIBA® achieved excellent or good (collectively defined as effective) hemostasis similarly for ICH and non-ICH bleeding events in patients receiving apixaban or rivaroxaban. Furthermore, the thromboembolism outcomes associated with FEIBA® were minimal. Given the effectiveness-to-safety association, FEIBA® could be viewed as a potential apixaban and rivaroxaban reversal agent, specifically among patients with ICH.