Intensive care unit admission

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- Restrictive Versus A Liberal Transfusion Strategy in Patients With Spontaneous Intracerebral Hemorrhage: A Secondary Analysis of TRAIN Randomized Clinical Trial
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Currently evidence do not allow to define standardized protocol to guide ICU admission for acute neurological patients (TBI) patients, postoperative neurosurgical procedures and stroke [1)].

Kim et al., enrolled 322 patients with severe trauma and TBI from January 2015 to December 2016. Clinical factors, indexes, and outcomes were compared before and after trauma center establishment (September 2015). The outcome was the Glasgow outcome scale classification at 3 months post-trauma.

Of the 322 patients, 120 (37.3%) and 202 (62.7%) were admitted before and after trauma center establishment, respectively. The two groups were significantly different in age (p=0.038), the trauma location within the city (p=0.010), the proportion of intensive care unit (ICU) admissions (p=0.001), and the emergency room stay time (p<0.001). Mortality occurred in 37 patients (11.5%). Although the preventable death rate decreased from before to after center establishment (23.1% vs. 12.5%), the difference was not significant. None of the clinical factors, indexes, or outcomes were different from before to after center establishment for patients with severe TBI (Glasgow coma scale score ≤8). However, the proportion of inter-hospital transfers increased and the time to emergency room arrival was longer in both the entire cohort and patients with severe TBI after versus before trauma center establishment.

They confirmed that for patients with severe trauma and TBI, establishing a trauma center increased the proportion of ICU admissions and decreased the emergency room stay time and preventable death rate. However, management strategies for handling the high proportion of inter-hospital transfers and long times to emergency room arrival will be necessary [2].

In the United States, 20% of patients with mild traumatic brain injury, defined as those with a Glasgow Coma Scale (GCS) of 13-15, presenting to the Emergency Department are admitted to the ICU [3].

Within a prospective, observational, multicenter cohort study 68 hospitals (of which 66 responded), mostly academic (n = 60, 91%) level I trauma centers (n = 44, 67%) in 20 countries were asked to complete questionnaires regarding the "standard of care" for severe neurotrauma patients in their hospitals. From the questionnaire pertaining to ICU management, 12 questions related to admission criteria were selected for this analysis. The questionnaires were completed by 66 centers. The median number of TBI patients admitted to the ICU was 92 [interquartile range (IQR): 52-160] annually. Admission policy varied; in 45 (68%) centers, patients with a Glasgow Come Score (GCS) between 13 and 15 without CT abnormalities but with other risk factors would be admitted to the ICU while the rest indicated that they would not admit these patients routinely to the ICU.

Volovici et al. found no association between ICU admission policy and the presence of a dedicated neuro ICU, the discipline in charge of rounds, the presence of step down beds or geographic location (North- Western Europe vs. South - Eastern Europe and Israel). Variation in admission policy, primarily of mild TBI patients to ICU exists, even among high-volume academic centers and seems to be largely independent of other center characteristics. The observed variation suggests a role for comparative effectiveness research to investigate the potential benefit and cost-effectiveness of a liberal versus more restrictive admission policies [4].

The aim of study was to describe current approaches and to quantify variability between European intensive care units (ICU)s in patients with traumatic brain injury (TBI). Therefore, Huijben et al. conducted a provider profiling survey as part of the 'Collaborative European NeuroTrauma Effectiveness Research in Traumatic Brain Injury' (CENTER-TBI) study. The ICU Questionnaire was sent to 68 centers from 20 countries across Europe and Israel. For this study, they used ICU questions focused on 1) hemoglobin target level (Hb-TL), 2) coagulation management, and 3) deep venous thrombosis (DVT) prophylaxis. Sixty-six centers completed the ICU questionnaire. For ICU-patients, half of the centers (N= 34; 52%) had a defined Hb-TL in their protocol. For patients with TBI, 26 centers (41%) indicated a Hb-TL between 70 and 90 g/l and 38 centers (59%) above 90 g/l. To treat trauma related hemostatic abnormalities the use of fresh frozen plasma (N= 48; 73%) or platelets (N= 34; 52%) was most often reported, followed by the supplementation of vitamin K (N= 26; 39%). Most centers reported using DVT prophylaxis with anticoagulants frequently or always (N= 62; 94%). In the absence of hemorrhagic brain lesions, 14 centers (21%) delayed DVT prophylaxis until 72 hours after trauma. If hemorrhagic brain lesions were present, the number of centers delaying DVT prophylaxis for 72 hours increased to 29 (46%). Overall, a lack of consensus exists between European ICUs on blood transfusion and coagulation management. The results provide a baseline for the CENTER-TBI study and the large between-center variation indicates multiple opportunities for comparative effectiveness research [5].

Intensive care unit admission for external ventricular drainage

Intensive care unit admission for external ventricular drainage.

References

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