Different But Equal: Outcomes Of Prolonged Postanesthesia Care Unit Stay After Trauma Laparotomy

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Introduction: Hospital overcrowding is common and can lead to delays in Intensive Care Unit (ICU) admission, resulting in increased morbidity and mortality in medical and surgical patients. Data on delayed ICU admission is limited in the post-surgical trauma cohort. Damage control laparotomy with temporary abdominal closure (DCL-TAC) for severely injured patients is often followed by an aggressive early resuscitation phase, usually occurring in the ICU. We hypothesized that patients who underwent DCL-TAC with initial postanesthesia care unit (PACU) stay would have worse outcomes than those directly admitted to ICU.

Methods: A retrospective chart review identified all trauma patients who underwent DCL-TAC at a Level 1 Trauma Center over a 5-year period. Demographics, injuries, and resuscitation markers at 12- and 24-hours were collected. Patients were stratified by location after index laparotomy (PACU vs ICU) and compared. Outcomes included composite morbidity and mortality. Multivariable logistic regression (MLR) was performed.

Results: Of the 561 patients undergoing DCL-TAC, 134 (24%) patients required PACU stay due to ICU bed shortage, and 427 (76%) patients were admitted directly to ICU. There was no difference in demographics, injury severity score (ISS), time to resuscitation, complications, or mortality between PACU and ICU groups. Only 46% of patients were resuscitated at 24 hours; 76% underwent eventual primary fascial closure. Under-resuscitation at 24 hours (AOR 0.55:95%CI 0.31-0.95, p=0.03), increased age (AOR 1.04:95%CI 1.02-10.55, p<0.0001), and increased ISS (AOR 1.04:95%CI 1.02-1.07, p<0.0001) were associated with mortality on MLR. The median time in PACU was 3 hours.

Conclusions: PACU hold is not associated with worse outcomes in patients undergoing DCL-TAC. While ICU was designed for the resuscitation of critically ill patients, PACU is an appropriate alternative when an ICU bed is unavailable.

One Liner: The postanesthesia care unit is acceptable for post-operative recovery for patients requiring damage-control laparotomy with temporary abdominal closure.