

**AFTER 9,000 LAPAROTOMIES FOR BLUNT TRAUMA,
RESUSCITATION IS BECOMING MORE BALANCED AND TIME TO
INTERVENTION SHORTER: HOW LOW CAN WE GO?**

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Introduction: Several advancements in hemorrhage control have been advocated for in the past decade, including balanced transfusions and earlier times to intervention. The aim of this study is to examine the effect of these advancements on outcomes of blunt trauma patients undergoing emergency laparotomy.

Methods: This is a 5-year (2013-2017) analysis of the Trauma Quality Improvement Program. Adult (age ≥ 18 years) blunt trauma patients with early (≤ 4 hours) PRBC and FFP transfusions and an emergency (≤ 4 hours) laparotomy for hemorrhage control were identified. Time-trend analysis of 24-hour mortality, PRBC/FFP ratio, and time to laparotomy was performed over the study period. The association between mortality and PRBC/FFP ratio, patient demographics, injury characteristics, transfusion volumes, and ACS verification level was examined by hierarchical regression analysis adjusting for inter-year variability.

Results: A total of 9,868 blunt trauma patients with emergency laparotomy were identified. Mean age was 44 ± 18 years, 67.5% were male, and median ISS was 34 [24-43]. Mean SBP at presentation was 73 ± 28 mm Hg, and median transfusion requirements were PRBC 9 [5-17] and FFP 6 [3-12]. During the 5-year analysis, time to laparotomy decreased from 1.87 hours to 1.37 hours ($p < 0.001$), PRBC/FFP ratio at 4 hours decreased from 1.93 to 1.71 ($p < 0.001$), and 24-hour mortality decreased from 23.0% to 19.3% ($p = 0.014$). **(Figure)** On multivariate analysis, PRBC/FFP ratio was independently associated with 24-hour mortality (OR 1.09; $p < 0.001$) and in-hospital mortality (OR 1.10; $p < 0.001$).

Conclusion: Resuscitation is becoming more balanced and time to emergency laparotomy shorter in blunt trauma patients, with a significant improvement in mortality. Future efforts should be directed towards incorporating transfusion practices and timely surgical interventions as markers of trauma center quality.

