RESULTS: There were 75,323 antibiotic treatment days within the collaborative. We found wide variation in the number of risk-adjusted antibiotic days, ranging from 1.31 [1.19-1.42] days to 2.56 [2.18-2.99] days, with an overall mean of 1.80 days. Six centers were identified as high outliers.

CONCLUSION: There exists wide variation in the duration of risk-adjusted antibiotic use amongst Level I and Level II trauma centers. Further study is needed to address the underlying cause of variation and for improved antibiotic stewardship in high outlier centers.

Combined Abdominal Aorta and Inferior Vena Cava Injury: A TQIP Analysis

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INTRODUCTION: Abdominal IVC and aortic injuries are rare and catastrophic. When combined, these injuries have historically demonstrated a high mortality rate when compared to IVC injuries alone. This study aims to elucidate whether this trend continues.

METHODS: The 2017 Trauma Quality Improvement Project database was queried for IVC injuries (ICD 10 codes S35.1 - S35.19) and aortic injury (ICD 10 codes S35.00 - S35.09). A combination of these codes identified concomitant injury to both structures. Patients > 18 years with penetrating injury were included. Patients with an AIS > 3 for the head and chest were excluded. Multivariate regression was used to compare the rate of mortality between combined IVC and aortic injury vs IVC alone.

RESULTS: A total of 319 patients met inclusion criteria, 284 IVC and 35 combined injury. Of the combined injuries, there were 30 (85.7%) deaths (p=0.001). IVC alone resulted in 117 (41.2%) deaths (p=0.001). More combined injury participants had a GCS < 8, compared to isolated IVC injury, 22 (62.8%) and 79 (27.8%), respectively (p=0.001). The combined injuries had lower SBP than isolated IVC injuries (91 vs 110, p=0.01). Of the combined injuries 34 (97%) had an ISS >16 in comparison to 203 (71.4%) isolated IVC (p=0.001). The difference in 4 hours blood transfusion approached significance with 11 units in the combined group and 9 in the isolated group (p=0.052).

CONCLUSION: Combined aorta and IVC injuries have a higher mortality rate, ISS > 16 and GCS < 8. Mortality rates in this cohort correlate with the current literature.

Contralateral vs Ipsilateral Vein Graft for Traumatic Arterial Injury Repair: A Multicenter Prospective Cohort Study

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INTRODUCTION: The largest available prospective multicenter database of vascular injuries was used to compare outcomes between contralateral, and ipsilateral or local vein interposition repair of traumatic arterial injuries.

METHODS: The AAST PROspective Observational Vascular Injury Treatment (PROOVIT) registry was queried for traumatic arterial injuries requiring vein interposition from November 2013 to January 2019. The primary outcome was need for reoperation. The secondary composite outcome was thrombosis, stenosis, pseudoaneurysm, stroke or infection requiring intervention. A multivariable logistic regression model was fit for reintervention and secondary outcome complications, and multivariable proportional odds logistic regression models were fit for hospital length of stay (LOS), ICU LOS, and ventilator days.

RESULTS: 373 patients (333 contralateral, 40 ipsilateral or local) from 19 institutions were identified. There was no difference between groups in age, gender, IDDM, preinjury anticoagulation/antiplatelet use, ISS, or admission physiology. The ipsilateral group had a higher admission INR (1.5 vs 1.2, p=0.03). While mechanism was associated with repair type (p=0.03), there was no difference in specific injury types identified. After controlling for confounders, contralateral vein was associated with a higher rate of operative re-intervention (23% vs. 10%; OR: 0.30; p=0.047). Contralateral vein was also associated with longer ICU (mean 4.9 vs 3.9; p<0.01) and hospital LOS (mean 14.9 vs 9.6; p<0.01). There was no difference in hospital death (p=0.7), composite secondary outcome (p=0.07), or ventilator days (p=0.67).

CONCLUSION: PROOVIT data suggest that ipsilateral or local vein use for vascular repair decreases need for reoperation, and ICU or hospital LOS compared to contralateral vein.

Cryoprecipitate Use During Massive Transfusion Does Not Reduce Mortality in Propensity Score Analysis

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INTRODUCTION: Cryoprecipitate is frequently administered as an adjunct to balanced transfusion in the setting of traumatic hemorrhage; civilian studies have not demonstrated a clear survival advantage. Prior observational studies noted selection bias when analyzing cryoprecipitate use. This study used propensity score analysis to minimize selection bias and evaluate the effects of early cryoprecipitate administration on inpatient mortality in the setting of massive transfusion for exsanguinating trauma.