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ePoster #13 | Abstract | Clinical Science | Trauma/Burn/Critical Care

A Paradox: Outcomes of Early Serotonergic Antidepressant Use Following Burn Injury

A. Chowdhury, Z. Dhalla, H. Asgarali, E. Kim, C. Chavez, J. Lee

University of Texas Medical Branch - Galveston

Background: Depression and anxiety are highly prevalent in the burn population and are frequently managed with selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs). Previous literature has suggested these medications may impair wound healing through 5-HT_{1A} receptor dysfunction. However, there is limited understanding of its impact in post-burn care.

Objective: This study aimed to elucidate the association between the use of serotonergic antidepressants after recent burn injury and wound healing complications.

Methods: Burn patients (2010–2025) were identified within the TriNetX U.S. Collaborative Network, a globally federated research database. Patients who were prescribed an SSRI or SNRI within 14 days of burn injury were compared with those without. Propensity score matching was performed for sociodemographics, psychiatric disorders, comorbidities, as well as burn severity (total body surface area), location of injury, and burn depth. Outcomes at 30 days included wound disruption, wound infection, pruritus, mortality, muscle atrophy, and lactic acidosis. Hypertrophic scar formation and contractures were assessed at 1 year. Separate univariate logistic regressions were performed for each outcome, statistical significance was defined as $p < 0.05$.

Results: A total of 33,814 burn patients were in the SSRIs/SNRIs group and 658,091 were in the control group. Following 1:1 matching analysis, 30,152 patients remained in each cohort. Within 30 days following burn injury, the SSRI/SNRI cohort had higher risk of wound disruption ($p = 0.002$), wound infection ($p < 0.001$), pruritus ($p = 0.028$), muscle atrophy ($p = 0.008$), and lactic acidosis ($p = 0.007$). In contrast, 30-day mortality was lower in the SSRI/SNRI cohort ($p < 0.001$). At 1 year after burn injury, patients exposed to SSRIs/SNRIs experienced higher risk of hypertrophic scar formation and contractures compared to unexposed controls (both $p < 0.001$).

Conclusion: The use of serotonergic antidepressants following recent burn injury was associated with increased risk of wound complications at 30 days and long-term scar formation at 1 year. However, mortality was observed to be lower among patients given SSRIs or SNRIs after their burn injury. Clinicians should consider postponing the prescription of serotonergic antidepressants after recent burn injury and recommend alternative forms of psychiatric support or treatment, as further research is needed to affirm the effects of these medications on wound healing.

30-days			
Outcome	RR	95% CI	P-Value
Wound Disruption	1.83	1.24–2.71	0.002
Wound Infection	2.24	1.54–3.25	<0.001
Pruritis	1.19	1.02–1.38	0.028
Muscle Atrophy	2.24	1.24–4.74	0.008
Lactic Acidosis	1.41	1.01–1.82	0.007
Mortality	0.73	0.63–0.84	<0.001
1-year			
Hypertrophic Scar Formation	1.27	1.16–1.39	<0.001
Contractures	1.4	1.30–1.51	<0.001

Paradoxical Risk: Elevated Ejection Fraction and Outcomes After Geriatric Hip Fracture

G Dominguez, N Fulcomer, L Moore, M Wandling, S Ugarte, G Khraish, T Puzio
University of Texas HSC - Houston

Background: Older adults with isolated hip fractures (IHF) are at increased risk for postoperative complications and mortality. Preoperative echocardiography is widely used, but the prognostic role of ejection fraction (EF) in geriatric trauma remains unclear.

Objective: Evaluate the association between preoperative EF and postoperative outcomes in geriatric trauma patients undergoing surgical repair of IHF.

Methods: We retrospectively identified 545 patients ≥ 65 years old with IHF at our level I trauma center between April 1, 2023, through September 30, 2024. Patients without preoperative echocardiography were excluded. The remaining 323 patients were stratified into four groups based on the American Heart Association's classification of heart failure by EF. Various outcomes were compared according to EF using statistical analyses.

Results: Median age was 83 years (IQR 76–89) and 61.3% were female. EF distribution was 262 with normal EF (50-70%), 24 with reduced EF (40-49%), 28 with severely reduced (<40%), and 9 with supraphysiologic EF (>70%). Length of stay ($p = .050$) and ambulatory score ($p = .048$) differed by EF, with supraphysiologic EF showing the longest hospital stay and lowest ambulatory score (Table 1). Nadir hemoglobin also differed ($p = .042$) and was lowest in supraphysiologic EF (Table 1). Inpatient mortality varied by EF ($p = .012$), highest in severely reduced EF (14.3%) followed by supraphysiologic EF (11.1%).

Conclusion: Supraphysiologic EF was associated with lower nadir hemoglobin, longer hospitalization, worse ambulatory score, and higher mortality compared with normal or reduced EF. Preoperative echocardiography may help identify this high-risk subgroup and enable earlier perioperative optimization.

Table 1. Patient Characteristics and Postoperative Outcomes Based on Ejection Fraction

	Normal (N = 262)	Severely Reduced (N = 28)	Supra-physiologic (N = 9)	p value
Mortality	6 (2.3%)	4 (14.3%)	1 (11.1%)	.012
AKI Incidence	124 (47.3%)	11 (39.3%)	5 (55.6%)	.797
LOS	7 (5-9)	7 (4-8)	11 (9-13)	.050
Ambulatory Scores	14 (12-17)	14 (11.3-18)	11 (10-13)	.048
BMI (kg/m ²)	23.4 (21.1-26.7)	23.6 (21.6-25.4)	21.5 (19.6-25.8)	.593
Nadir Hemoglobin (g/dL)	7.7 (6.93-9.10)	8.55 (7.47-9.53)	6.9 (6.20-7.00)	.042

ePoster #16 | Abstract | Clinical Science | Trauma/Burn/Critical Care

Assessing the Impact of Nephrectomy versus Renal Salvage on Mortality and Dialysis in Traumatic Renal Injuries

G Isayeva, J DuBose, P Teixeira, T Cardenas, J Aydelotte, M Trust, S Ali, M Robert, C Brown
University of Texas at Austin Dell

Background: Nephrectomy and renal salvage represent the two options during the operative management of renal injuries. While nephrectomy provides definitive treatment by removing the injured kidney, renal salvage techniques (partial nephrectomy and renal repair), aim to preserve renal function.

Objective: The specific aim of this study is to compare outcomes of nephrectomy vs. renal salvage in operatively managed traumatic renal injuries.

Methods: The 2022 NTDB was used to identify adult trauma patients with operatively managed renal injuries. We classified patients into two groups: nephrectomy and renal salvage. Groups were compared using univariate and multivariate analysis.

Results: Among the 1,058 patients who underwent operative management of renal injuries, there 739 (70%) had nephrectomy and 319 (30%) had renal salvage. When comparing nephrectomy to renal salvage patients, there was no difference in age, gender, or race. However, nephrectomy patients more often sustained blunt trauma (32% vs. 14%, $p<0.001$), had a lower GCS (12 vs. 13, $p<0.001$), higher ISS (31 vs. 25, $p<0.001$), were more often hypotensive on arrival (30% vs. 19%, $p<0.001$), and received more packed red blood cells, plasma, and platelets (all $p<0.001$). Nephrectomy patients had a higher mortality (26% vs. 13%, $p<0.001$). However, after logistic regression controlling for age, mechanism, hypotension, GCS, and ISS, nephrectomy was not independently associated with mortality (1.48 [0.95-2.31], $p=0.08$) or the need for dialysis (1.69 [0.87-3.26], $p=0.12$). This held true for high grade (IV-V) as well as low grade (I-III) injuries.

Conclusion: When compared to renal salvage, nephrectomy as the operative management of renal injuries is not associated with mortality or dialysis. Regardless the grade of injury, nephrectomy should be considered a safe option for the operative management of renal trauma.

ePoster #17 | Abstract | Clinical Science | Trauma/Burn/Critical Care

Clinical Outcomes in Geriatric Isolated Hip Fracture Patients: Association between Acute Kidney Injury, Chronic Kidney Disease, and Bleeding

H Kwon, G Dominguez, N Fulcomer, S Ugarte, M Wandling, T Puzio, G Khraish
University of Texas HSC - Houston

Background: Older adults undergoing hip fracture repair often develop acute kidney injury (AKI) and perioperative bleeding, with underlying chronic kidney disease (CKD) leading to adverse outcomes. While AKI and bleeding individually contribute to poor outcomes, their combined effects remain understudied.

Objective: We aim to examine whether AKI, CKD, and their coexistence are linked to greater bleeding risk and worse outcomes in geriatric patients with isolated hip fractures (IHF).

Methods: 545 geriatric IHF patients in our level I trauma center between April 1, 2023 and September 30, 2024 were classified into normal function, AKI, CKD, and AKI + CKD groups. Univariate and multivariate regression analyses were performed with Hemoglobin (Hgb) decline, nadir Hgb, length of stay (LOS), and the volume of blood product received.

Results: AKI group had a lower nadir Hgb ($p < 0.001$), greater Hgb decline ($p < 0.001$) and longer hospital stays ($p < 0.001$) compared to those with normal renal function. AKI + CKD group had a lower nadir Hgb ($p < 0.001$) and longer LOS ($p < 0.001$) than those with normal renal function. Total volume of blood products was similar among all groups.

Conclusion: AKI, with or without CKD, is associated with greater bleeding severity and longer hospital stays in older adults undergoing IHF repair. Renal function may be a valuable tool for perioperative risk stratification and discharge planning in this vulnerable population.

Table 1. Comparison of Clinical Outcomes by Renal Function Status

	Normal (N = 269)	AKI (N = 155)	AKI+CKD (N = 75)	<i>p</i> value
Nadir Hgb	8.55 (7.2, 10.4)	7.30 (6.80, 8.90)	7.70 (6.90, 8.35)	<.001
Hgb Decline	3.2 (1.80, 4.40)	3.90 (2.60, 5.30)	3.50 (2.45, 4.95)	<.001
LOS	5.0 (4.0, 8.0)	7.0 (5.0, 9.0)	8.0 (6.0, 10.0)	<.001
Blood Prod V.	500 (300, 600)	450 (300, 601)	300 (300, 600)	=0.173

ePoster #18 | Abstract | Clinical Science | Trauma/Burn/Critical Care

Impact of Preexisting Atopic Diseases on Hypertrophic Scarring Outcomes After Burns

P Nguyen, Y Tanas, J Wang, K Baker, N Gonzalez, S Iyer, G Villa, H Chan, J Lee
University of Texas Medical Branch - Galveston

Background: Atopic disease has been associated with impaired burn wound healing through barrier dysfunction, chronic inflammation, and immune dysregulation. This disrupted healing may increase susceptibility to hypertrophic scarring, yet the relationship has not been well defined. To date, no known study has specifically examined this relationship.

Objective: This retrospective cohort study evaluated the association between preexisting atopic disease and hypertrophic scarring after burn injury.

Methods: The TriNetX Research Network was queried to identify patients ages 18 years and older with burn injuries between 2010 and 2024. Two cohorts were defined: patients with a diagnosis of atopic disease (asthma, allergic rhinitis, atopic dermatitis, or eczema) within one year prior to injury, and patients without these conditions. Patients with prior steroid use were excluded. Propensity score matching (1:1) was performed to control for demographics, body mass index, comorbidities, substance use history, and total body surface area burned. Outcomes included hypertrophic scarring at 3 and 12 months. Cox proportional hazards models were used to calculate hazard ratios (HR) with 95% confidence intervals (CI), and statistical significance was set at $p < 0.05$. Cumulative incidence was reported for each cohort at both time points.

Results: After matching, each cohort included 9,660 patients. At 3 months, patients with preexisting atopic disease had higher rates of hypertrophic scarring than non-atopic controls (4.75% vs 3.68%, HR 1.31, 95% CI 1.11–1.55, $p=0.001$). By 12 months, this difference persisted and further widened (7.27% vs 5.31%, HR 1.38, 95% CI 1.20–1.58, $p < 0.001$).

Conclusion: Preexisting atopic disease is associated with a significantly increased risk of hypertrophic scarring after burn injury, underscoring the need for early surveillance and targeted scar management. Prospective studies should confirm causality and evaluate preventive interventions.

Table 1. 3-Month Postoperative Outcomes in Patients With Preexisting Atopic Skin Disease: Scarring Condition

Outcome	Cumulative Incidence in Atopic Cohort	Cumulative Incidence in Non-Atopic Cohort	Hazard Ratio	Confidence Interval	p-value
Primary Outcomes: Scarring Conditions					
Hypertrophic Scarring	4.75%	3.68%	1.31	1.11-1.55	0.001

Table 2. 12-Month Postoperative Outcomes in Patients With Preexisting Atopic Skin Disease: Scarring Condition

Outcome	Cumulative Incidence in Atopic Cohort	Cumulative Incidence in Non-Atopic Cohort	Hazard Ratio	Confidence Interval	p-value
Primary Outcomes: Scarring Conditions					
Hypertrophic Scarring	7.27%	5.31%	1.38	1.20-1.58	< 0.001

ePoster #19 | Abstract | Clinical Science | Trauma/Burn/Critical Care

Risk Factors for Tube Replacement after Percutaneous Gastrostomy Tube Placement: A Multi-Center Retrospective Study of over 100,000 Patients

David Dodson B.S., Braden Miller M.D., Ashley Montgomery D.O., Aashish Rajesh, M.B.B.S., Mark T. Muir, M.D., F.A.C.S.
University of Texas Medical Center - San Antonio

Background: Percutaneous endoscopic gastrostomy (PEG) tubes provide enteral feeding access in critically ill patients. While determinants for PEG tube complications are well studied, there is limited data on the risk factors of gastrostomy tube replacement.

Objective: To evaluate independent risk factors of repeat gastrostomy tube placement after PEG tube insertion.

Methods: The TriNetX database (comprising 134 million patient records) identified adult patients who underwent PEG placement. Patient clinicodemographic characteristics, pre-procedure laboratory values, and complication data were collected. Repeat gastrostomy tube placement (defined as either percutaneous, laparoscopic-assisted, fluoroscopy-guided or open Stamm gastrostomy) was evaluated at 6 months. Cox proportional hazards regression modeling was used to identify risk factors.

Results: 107,512 patients were identified, of whom 4,484 underwent repeat gastrostomy tube placement (4.2%). Repeat gastrostomy placement was performed fluoroscopically in 2,614 (2.4%), open in 854 (0.7%), laparoscopically in 621 (0.6%), and percutaneously in 395 (0.4%). The overall 1-month complication rate was 22.0%. On multivariate analysis, risk factors for repeat gastrostomy placement were presence of any complication (HR 1.958, $p < 0.0001$), male gender (HR 1.156, $p < 0.0001$), previous gastrostomy infection (HR 1.431, $p = 0.050$), CRP > 75 mg/dL (HR 1.191, $p = 0.049$), albumin < 3 g/dL (HR 1.144, $p = 0.0003$), and lymphopenia < 1 103/uL (HR 1.352, $p < 0.0001$). Protective factors included age (HR 0.996, $p < 0.0001$), and hemoglobin < 10 g/dL (HR 0.665, $p < 0.0001$). BMI was not an independent risk factor for gastrostomy replacement.

Conclusion: PEG tube complications are the most significant independent risk factor for replacement. Targeted strategies to address modifiable risk factors may reduce the burden of repeat interventions, improve patient outcomes, and lower healthcare utilization.

Covariate	HR	95% CI	p-value
Any complication	1.96	1.83–2.10	<0.0001
Age (per year)	0.996	0.994–0.997	<0.0001
Male sex	1.16	1.09–1.23	<0.0001
Gastrostomy infection	1.43	1.00–2.06	0.050
CRP >75 mg/L	1.19	1.00–1.42	0.049
Albumin <3 g/dL	1.14	1.06–1.23	0.0003
Prealbumin <15 mg/dL	1.12	1.00–1.26	0.050

Sex-Informed Trauma Resuscitation: Reevaluating Empiric Calcium Administration in Women

N Raghavan, D Limon, M Patel, P Patel, A Moreira, A Ciaraglia, S Nicholson, D Jenkins
University of Texas Medical Center - San Antonio

Background: Calcium is essential for coagulation and cellular stability in trauma, and both hypocalcemia and hypercalcemia have been independently linked to increased coagulopathy, transfusion needs, and mortality at 6 h, 24 h, and in-hospital. While early calcium replacement is often emphasized to counter hypocalcemia, empiric administration without a risk-stratified approach may cause more harm than benefit, particularly given sex-specific physiological differences in calcium regulation.

Objective: To determine whether biological sex independently predicts early post-traumatic hypocalcemia and to evaluate implications for sex-stratified calcium administration strategies.

Methods: A retrospective analysis of 1,082 Level 1 trauma patients (812 male, 270 female) was performed. Ionized calcium (iCa) was measured upon emergency department arrival prior to transfusion. Hypocalcemia was defined as iCa < 0.9 mmol/L. Univariate analysis and multivariable logistic regression assessed sex and Injury Severity Score (ISS) as predictors.

Results: Female sex was associated with 29% reduced odds of hypocalcemia (OR = 0.71, p = .026). Female patients demonstrated relative protection against early iCa depletion. In multivariable analysis, ISS remained an independent predictor (p = .030), while sex showed a trend suggestive of biological relevance (p = .076).

Conclusion: Female trauma patients are less prone to early hypocalcemia, suggesting greater calcium homeostatic stability. Given that both hypo- and hypercalcemia worsen coagulation and outcomes, empiric calcium administration in low-risk women may increase the risk of iatrogenic hypercalcemia. A sex-informed, measurement-guided approach may enhance precision and safety in trauma resuscitation.

ePoster #21 | Abstract | Clinical Science | Trauma/Burn/Critical Care

Crossing the Threshold: Is Post-Laparotomy Hemoglobin Associated with Initial Physical Function after Abdominal Trauma?

WD Rieger, RW Green, AR Jeckovich, S Martinez Ugarte, MO Fajemisin, JD Scott, MW Wandling, LS Kao
University of Texas HSC - Houston

Background: Restrictive transfusion practices have shown benefit in stable, non-bleeding patients. How this practice affects physical function post-hemorrhage control after abdominal trauma is poorly understood. Physical function can be assessed during inpatient physical therapy by the Activity Measure Post Acute Care (AM-PAC), with scores >16 indicating adequate function without rehabilitative need.

Objective: We explored whether different hemoglobin thresholds correlated with physical function at initial mobilization in adult trauma patients. We hypothesized that hemoglobin >7 mg/dL is associated with adequate initial physical function.

Methods: We performed a single-center retrospective analysis of adult (≥ 16 years) trauma patients who underwent exploratory laparotomy and received physical therapy from 1/2022-6/2023. Injury and mobility data were collected from trauma registry and medical records. Univariate, and multivariable analyses were performed.

Results: Of 315 patients, 239 (76%) were male with median age of 33 (IQR 23-43). Patients were severely injured, with median injury severity score of 22 (IQR 12-32); 167 (53%) sustained a penetrating injury. Median mobilization hemoglobin was 9.2 (IQR 8.0-10.4) with median initial AM-PAC score of 16 (IQR 12-20). Of hemoglobin thresholds >7, >8, and >9 at mobilization, >9 showed greatest odds of adequate physical function, while >7 showed none (Table). Adjusting for pre-specified factors (injury severity and type, days to mobilization), hemoglobin >9 was associated with doubled odds (OR 2.39, CI 1.38-4.13) of adequate physical function.

Conclusion: Hemoglobin >9 g/dL was associated with improved initial physical function in post-laparotomy trauma patients. While higher hemoglobin levels may mark less severe injury, poor mobilization may be a symptom of post-traumatic anemia.

Factor	OR	95% CI	p-value
Hemoglobin >7 g/dL	0.37	0.09 – 1.41	0.15
Hemoglobin >8 g/dL	2.45	1.28 – 4.68	0.01
Hemoglobin >9 g/dL	3.37	2.00 – 5.65	<0.01

Table. Separate univariate regression analyses of initial AM-PAC scores >16 per hemoglobin >7, >8, and >9.

ePoster #22 | Abstract | Education | Trauma/Burn/Critical Care

Understanding Patient-Reported Outcome Measures: The Association with Health Literacy in the Inpatient Trauma Population

Jerome D Scott, BS; William D Rieger, MD; Renee W Green, MD; Marissa N Thibodeaux, BFA; Lillian S Kao, MD, MS, MBA, FACS; Krislynn M Mueck, MD, MS, MPH
University of Texas HSC - Houston

Background: Patient-Reported Outcome Measures (PROMs) capture health-related quality of life from patients' perspectives. However, little is known about how well injured patients understand these tools.

Objective: We aimed to evaluate PROM understanding in relation to health literacy. We hypothesized that low health literacy is associated with PROM understanding below 70%.

Methods: We conducted a prospective cross-sectional study of English-speaking adults (≥ 18 years) recovering from traumatic or burn injuries, excluding those with GCS < 15 . Participants completed the Brief Health Literacy Screening Tool (BRIEF) and were categorized as having low (4–12), marginal (13–16), or adequate (17–20) literacy. Each was randomly assigned to complete either the EuroQol 5-Dimension 3-Level (EQ-5D-3L) or the 12-item Short Form Survey (SF-12). Understanding was assessed via teach-back interviews scored independently by two reviewers using a predefined rubric; discrepancies were adjudicated. Acceptable understanding was defined as $\geq 70\%$. Associations between health literacy and PROM comprehension were analyzed using univariate and multivariable models.

Results: Of 77 eligible patients, 48 were enrolled (65% male; median age 58, IQR 37–79). Most sustained traumatic injuries (88%). Median BRIEF score was 16 (IQR 12–19, marginal range). Median PROM understanding was 80% (IQR 60–98%), with 35% demonstrating poor comprehension. Understanding was higher for EQ-5D (90%) than SF-12 (60%). On multivariable regression, low health literacy was associated with poor understanding (OR 20, 95% CI 3.6–110).

Conclusion: Low health literacy is associated with poor PROM understanding in injured patients. Ensuring PROM clarity is essential to achieving equitable, patient-centered outcome measurement.

ePoster #23 | Abstract | Basic/Transactional Science | Trauma/Burn/Critical Care
Platelet Inhibition Following Traumatic Brain Injury Does Not Independently Correlate with Intracranial Hematoma Expansion

J Spriggs, A Criscitiello, C Hall
Baylor Scott & White Health

Background: Traumatic brain injury (TBI) remains one of the leading causes of morbidity and mortality in trauma patients. Platelet mapping (PM), an adjunct to thromboelastography (TEG), is thought to be of particular relevance to this population. Previous studies have suggested that correction of platelet inhibition may improve outcomes in these patients.

Objective: We aimed to determine if platelet inhibition correlated with progression of intracranial hematoma expansion in TBI patients.

Methods: Our institution's TQIP database yielded 113 patients with TBI that had TEG with platelet mapping drawn at admission between 1/1/2023 and 10/31/2024 and a repeat CT head within 4-6 hours. We subdivided these patients based on whether the degree of platelet inhibition exceeded 60% and compared outcomes, with the primary outcome being stability vs progression of repeat CT head.

Results: There were 44 patients with platelet inhibition greater than 60%. 10 (22.7%) of these patients would have expansion of intracranial hematoma. This was compared to the 69 patients with platelet inhibition less than 60%, of whom 13 (18.9%) would have hematoma progression ($p=0.617$). Between these groups, there was no significant difference in demographic variables, hospital/ICU length of stay, GCS on presentation, head AIS, ISS, mortality, or in the rate of platelet, FFP, or DDAVP administration.

Conclusion: Platelet inhibition does not independently correlate with worse outcomes in TBI patients. These results suggest that correction of coagulopathy based solely on the level of platelet inhibition would not improve outcomes in TBI patients. Further prospective studies are needed to delineate the role of platelet mapping in TBI.

ePoster #24 | Abstract | Education | Trauma/Burn/Critical Care

Is Understanding of Injury-Related Discharge Education Materials Associated with Health Literacy?

M Thibodeaux, W Rieger, R Green, J Scott, L Kao, K Mueck
University of Texas HSC - Houston

Background: Lack of understanding of discharge patient education materials (PEMs) can lead to worse patient outcomes.

Objective: We hypothesized that low and marginal health literacy is associated with poor patient understanding of trauma- and burn-related PEMs, adjusting for PEM readability.

Methods: We performed a prospective study of English-speaking adult (≥ 18 years) trauma and burn patients discharged home. Patient demographics and injury data were obtained from medical records. Patient understanding of PEMs was assessed by a teach-back interview, with poor understanding set at $< 70\%$ correctness. Health literacy was assessed via the Brief Health Literacy Screening Tool with scores of low (4-12), marginal (13-16), or adequate (17-20). PEM readability was assessed using the Simple Measures of Gobbledygook (SMOG) formula. Descriptive, univariate, and multivariable statistics were performed.

Results: Of 50 patients, 68% were male, median age was 45 (IQR 18-74), and 74% sustained a traumatic injury. Median health literacy was 17 (IQR 12-20) with 12% of patients categorized as low, 30% marginal, and 58% adequate. Of 70 discharge PEMs, median readability was 8.9 (IQR 8.2-9.6). Median understanding score per teach-back interview was 85% (IQR 76-94); 12 patients (24%) having poor understanding ($< 70\%$). After adjusting for PEM readability, low and marginal compared to adequate health literacy was significantly associated with poor understanding (OR 6.2, 95% CI 1.4-28, $p=0.02$; Table).

Conclusion: Patients with low and marginal health literacy were more likely to have poor PEM understanding, suggesting a need for additional educational interventions. Assessment of patients' health literacy and understanding of PEMs should be considered prior to discharge home.

Table. Factors associated with poor understanding of PEMs ($< 70\%$)

Factor	OR	95% CI	P-value
Low/Marginal Health Literacy (ref Adequate)	6.2	1.4 - 28	0.02
PEM Readability (SMOG)	0.6	0.2 – 1.8	0.34
English as a 2 nd Language	1.0	0.1 – 7.2	0.99

ePoster #25 | Abstract | Clinical Science | Trauma/Burn/Critical Care

Review of National Quality Data Highlights Importance of Preoperative Risk Stratification and Optimization for Reduction of Postoperative Respiratory Failure

K Verma, J Spriggs, G Ng
Baylor College of Medicine

Background: Ongoing surgical quality improvement initiatives have identified postoperative respiratory failure as a priority for focused analysis and intervention. To better understand contributing factors, data from the Agency for Healthcare Research and Quality (AHRQ) and the National Surgical Quality Improvement Program (NSQIP) were reviewed. Previous studies have shown that reintubation and prolonged mechanical ventilation are associated with increased length of stay, morbidity, and mortality.

Objective: To utilize national quality database reports to identify modifiable factors and potential interventions aimed at reducing postoperative respiratory failure.

Methods: Patients meeting criteria for postoperative respiratory failure, defined by AHRQ Patient Safety Indicator 11 (PSI-11) or NSQIP metrics of mechanical ventilation greater than 48 hours or unplanned intubation within 30 days, were identified. Detailed case analyses determined whether opportunities for improvement existed in preoperative risk stratification or postoperative management, or if no modifiable factors were identified.

Results: From the AHRQ cohort, 11 of 20 patients (55%) were identified as likely to have benefited from improved preoperative risk stratification and optimization, while 2 patients (10%) could have benefited primarily from enhanced postoperative management. Of the 30 non-emergent cases in the NSQIP cohort, 12 (40%) showed potential benefit from similar preoperative optimization strategies. The two databases captured largely distinct groups, with only one overlapping case.

Conclusion: This review underscores the importance of targeted preoperative risk assessment in preventing postoperative respiratory failure. A multidisciplinary workgroup has been established to refine preoperative evaluation using standardized screening tools and to implement interventions such as incentive spirometry, nutritional optimization, smoking cessation, and prehabilitation for high-risk patients.