ISW26-433-01 (0154)

GOOD OUTCOMES OF EMERGENT RESUSCITATIVE THORACOTOMY IN COMBAT PATIENTS INJURED IN RUSSO-UKRAINIAN WAR

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Introduction:
Emergent resuscitative thoracotomy (ERT) is a surgical procedure to be applied for the patients in extreme condition with acute traumatic cardiac arrest (TCA). ERT is performed in critical patients with severe shock. ERT is performed in combat patients with severe ballistic thoracoabdominal injuries in ongoing war in Ukraine. The aim of this study was to evaluate the utility of ERT in the combat patients injured in war in Ukraine.

Material and Method:
There were identified 406 patients with gunshot injuries and TCA who were treated at Role 2 and 3 hospitals. Of these, TCA was managed by closed-chest cardiopulmonary resuscitation (CPR) in 347 patients (85.5%) and by ERT in 59 patients (14.5%). ERT was performed according to ATLS guideline.

Results:
A 96 (23.6%) patients survived in the CRP group as compared to 27 (6.7%) patients in the ERT group. Effectiveness of ERT was better in case of patients admitted to deployed field hospitals: 23 (85.3%) survived in case of admission within 10 minutes, 3 (11.6%) patients survived when admitted within 30 min, and 1 (3.1%) patient survived when admitted in 60 min. The majority of patients died due to shock progression. The follow up of 3 days showed survival of 10 (37%) patients treated with ERT vs. 8 (8.6%) patients treated with CRP.

Conclusion:
Application of ERT in selected patients is associated with relatively good outcomes. The fast evacuation to the is associated with better survival of the combat patients in war in Ukraine.

ISW26-433-02 (0418)

THREE-MONTH MORTALITY AND DISABILITY AFTER MODERATE TO SEVERE INJURIES IN FOUR LOW- OR MIDDLE-INCOME COUNTRIES

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Introduction:
Burden of mortality or disability after injury is high in LMICs. Little is known about these outcomes among those who reach healthcare, or the determinants of disparity in the outcomes.

Material and Method:
Patients admitted to 19 hospitals in Pakistan, Ghana, Rwanda and South Africa, selected as contextually diverse countries, with moderate to severe injuries were followed up until three months after discharge. A multivariable model was used to assess associations with outcomes at 3 months after discharge.

Results:
From 9,720 eligible patients, 8687 were followed up until death or discharge and 6213 to 3 months. Median age was 31 (IQR: 20,43) years;76.8% were males. In hospital mortality was suffered by 6.1% (531/8687). Three-month post-discharge mortality or disability occurred in 47.6% (2,476/5199). Three-months post discharge, mortality was 9.9% (616/ 6213) and disability was 40.6% (1860/4583). Three-month post-discharge mortality or morbidity increased with arriving to facilities by ambulance, within the first hour after injury, without visiting another facility; having orthopaedic injuries, increasing age and being poor. Similar results were observed for disability. Odds of mortality was associated with arrival by ambulance, without visiting another facility, being admitted to a tertiary hospital; age, lack of education, injury severity, and suffering neurotrauma.

Conclusion:
Burden of mortality or disability after reaching care in LMICs is high. High odds of outcomes after arrival by ambulance, within the first hour, or to a tertiary facility might be explained by people with more severe injuries taking this pathway.

ISW26-433-03 (0806)

ADVANCING TRAUMA SYSTEM PERFORMANCE IN ETHIOPIA THROUGH TEAM-BASED TRAUMA QUALITY IMPROVEMENT TRAINING: RESPONSE TO AN INAUGURAL TRAINING INITIATIVE

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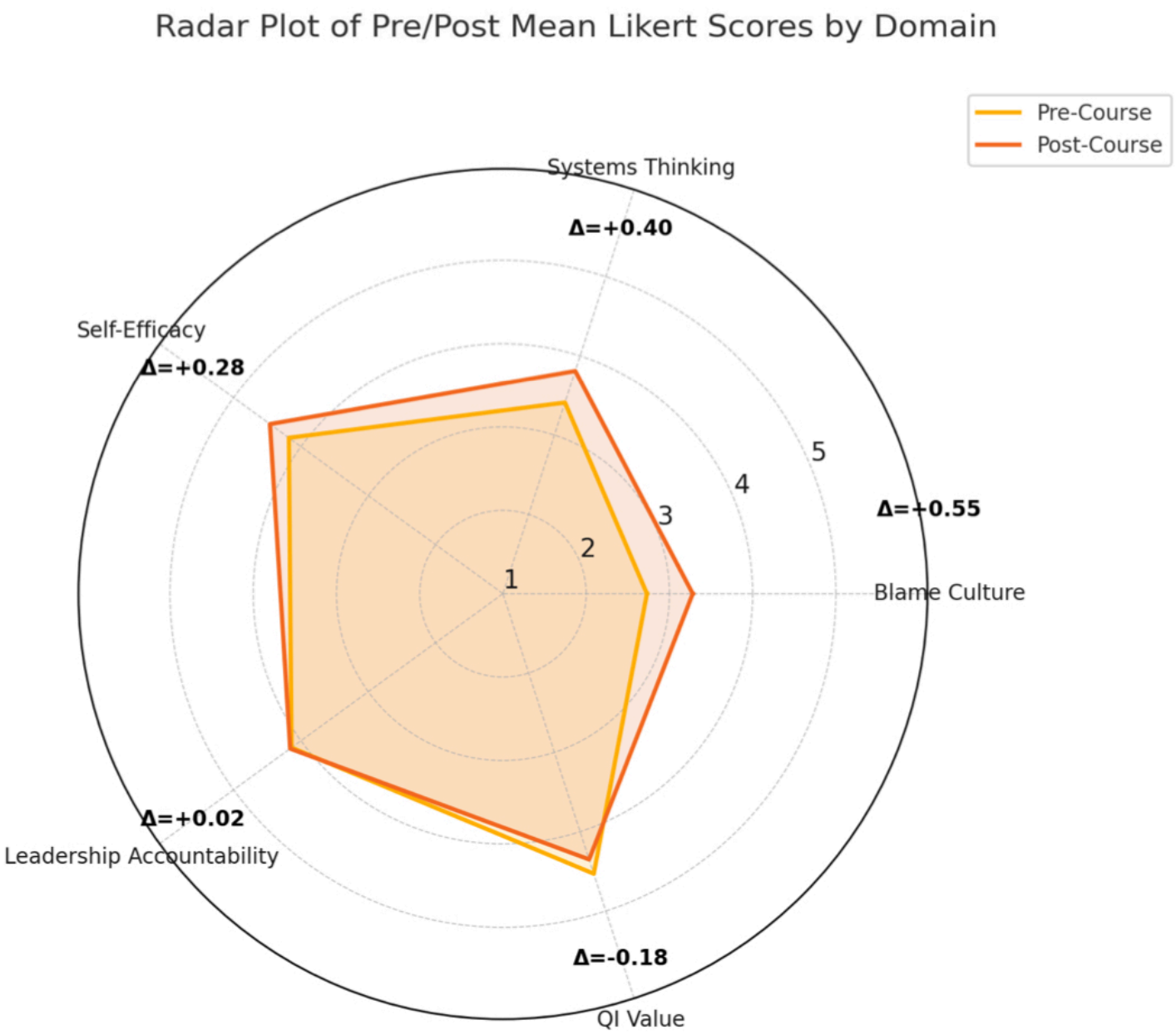
Introduction:
Trauma is the leading cause of preventable morbidity and mortality in Ethiopia, yet trauma-specific quality improvement (QI) infrastructure remains limited. To address this gap, a multidisciplinary trauma QI course was implemented in June 2025 at ALERT and AaBET Hospitals with support from the Ministry of Health, Ethiopia. The training aimed to establish trauma QI committees and build capacity in systems thinking, error analysis, and process improvement.

Material and Method:
Participants from six cadres, including nurses, general practitioners, and surgeons, completed pre- and post-course surveys assessing five QI domains. Responses were analyzed using unpaired t-tests and Wilcoxon rank-sum tests. Post-course evaluations were assessed descriptively.

Results:
Twenty-six participants (84%) completed the pre-course survey, and 14 (45%) completed the post-course survey. Significant improvements were observed in understanding the QI process (mean pre = 4.0, post = 5.0, $p = 0.002$) and confidence in preventing repeat errors (mean pre = 4.0, post = 5.0, $p = 0.040$). The largest domain-level gains were in blame culture (+0.55) and systems thinking (+0.40), with more modest increases in self-efficacy (+0.28) and leadership (+0.02), and a slight decline in QI value (–0.18) (Figure 1). Trust in institutional error handling remained low (median = 3.0). General practitioners and unit coordinators showed the most consistent gains; nurses demonstrated greater variability, including the only decline in perceived QI value.

Conclusion:
The course enhanced QI knowledge and confidence, but also highlighted persistent institutional barriers. Sustained progress will require leadership engagement, integration into existing QI structures, and resource-sensitive strategies for scale-up.


Radar Plot of Pre/Post Mean Likert Scores by Domain
Pre-Course
Post-Course
Systems Thinking
Δ=+0.40
Self-Efficacy
Δ=+0.28
Blame Culture
Δ=+0.55
Leadership Accountability
Δ=+0.02
QI Value
Δ=-0.18
1
2
3
4
5

ISW26-433-04 (0629)

PREVALENCE OF TRAUMA-INDUCED COAGULOPATHY DIAGNOSED USING THROMBOELASTOGRAPHY IN A REGIONAL HOSPITAL IN THE PHILIPPINES

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Introduction:
This study explores the prevalence of Trauma-Induced Coagulopathy (TIC) in Filipino patients admitted to a tertiary regional hospital. TIC is an abnormal coagulation process mainly attributed to severe traumatic injuries. The study used deranged parameters in thromboelastography (TEG) and prothrombin time with INR for conventional coagulation assay (CCA) to diagnose TIC.

Material and Method:
From July 2023 to January 2024, sixty-six patients meeting trauma admission criteria had blood samples taken for TEG, CCA, arterial blood gas, and complete blood count simultaneously. TEG results were interpreted by an intensivist.

Results:
TIC was diagnosed in 45.45% of patients (30 individuals): 16.67% were diagnosed using only TEG, 22.72% using only CCA, and 6.06% using both. Mortality was highest when TIC was diagnosed using both assays (100%). When diagnosed using TEG and CCA separately, mortality was higher with TEG (45% vs 13%). Average lengths of stay were 14.6 days, 11 days, and less than 24 hours for those diagnosed with TIC using CCA, TEG, and both, respectively. Average initial blood transfusion requirements in the emergency department were 2 units each for patients with TIC diagnosed using CCA or TEG alone, and 5.5 units for patients diagnosed using both.

Conclusion:
The prevalence of TIC is higher in this population than previously reported. Patients diagnosed with TIC had poorer outcomes, especially when diagnosed using both assays. TEG and CCA should be performed on severe trauma patients for guidance in resuscitation and prognostication.

ISW26-433-05 (0315)

EARLY WHOLE BLOOD VS BALANCED TRANSFUSION IN TRAUMA: CLINICAL BENEFITS WITHOUT LABORATORY INFERIORITY

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Introduction:
The whole blood (WB) transfusion has re-emerged as a resuscitation method in trauma care. While its superiority over isolated red blood cells is recognized, comparative data against balanced component therapy—using a 1:1:1 ratio of erythrocytes, plasma, and platelets—are limited. This study compares early clinical and laboratory outcomes of WB versus balanced transfusion in trauma patients.

Material and Method:
A retrospective study included trauma patients who received transfusion within four hours of admission. Among analyzed 1508 trauma patients, 188 were included (78 WB and 110 balanced transfusion). Outcomes included ICU stay, total hospital stay, and in-hospital mortality. Regression analyses adjusted for Trauma Related Injury Severity Score (TRISS) and shock index. Changes in blood were also compared.

Results:
WB recipients had shorter ICU (6.3 vs. 7.4 days) and total hospital stays (12.6 vs. 14.2 days) than those receiving balanced transfusion. These differences remained significant after adjusting for trauma severity. Mortality did not differ significantly between groups. Regression analyses showed that changes in coagulation markers (APTT, PT) and platelet counts were primarily associated with trauma severity, not transfusion type. This indicates laboratory outcomes were not worse with WB, supporting its non-inferiority.

Conclusion:
Early WB transfusion may reduce ICU and hospital stay compared to balanced component therapy, without compromising laboratory stability. These findings suggest WB is not inferior and may be clinically advantageous in selected trauma patients. Further prospective validation is warranted.

ISW26-433-06 (0266)

EVALUATING A BLENDED-LEARNING MODEL IN TRAUMA EDUCATION: A NON-INFERIORITY STUDY OF THE DUTCH HYBRID DSATC COURSE

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Introduction:
The Definitive Surgical and Anaesthetic Trauma Care (DSATC) course enhances healthcare professionals' ability to manage polytrauma patients. In 2020, the course shifted from a traditional three-day, face-to-face format to a two-day blended-learning model combining asynchronous online preparation with in-person training. This study evaluates the impact of the blended-learning format on participants' self-assessed confidence in technical and non-technical skills.

Material and Method:
This retrospective non-inferiority study compared confidence gains in skills between participants of the traditional and blended-learning DSATC courses. Quantitative pre- and post-course questionnaires measured self-assessed confidence. Mean changes in confidence were analysed with independent samples t-tests using a non-inferiority margin of -0.5. Subgroup analyses explored differences by professional role, physician seniority, and the effects of individual preparation on baseline confidence. Annual course evaluations provided participant feedback.

Results:
In total, 180 (21%) participants completed the pre-course and one-day post-course questionnaires. The cohorts differed significantly by sex (p=0.021), profession (p=0.048) and physician experience (p=0.025). Both formats significantly improved confidence, with the blended-learning course demonstrating non-inferior improvements in technical (MD 0.06, 95%-CI [-0.14;0.26]) and non-technical skills (MD 0.09, 95%-CI [-0.09;0.26]). However, non-technical confidence declined after preparation in the blended-learning cohort (MD -0.21, p=0.042). Feedback revealed varied perceptions of course relevance related to professional background.

Conclusion:
The blended-learning format is non-inferior to the traditional model in enhancing DSATC participants' confidence. The decline in confidence after preparation may reflect increased awareness of learning needs, fostering self-directed learning. These findings support tailoring trauma education to diverse professional groups and encourage further research into blended-learning models in multidisciplinary trauma training.