

Chest Wall Injury Society

Title of Presentation

Chest Wall Collaborative Center Impact on Non-Operative Outcomes

Background

In the United States, approximately 500,000 patients are diagnosed with blunt chest wall injuries annually. Rib fractures are present in 39% of cases and carry a 7% mortality rate. As patient presentation and management can vary widely, the Chest Wall Injury Society has encouraged development of Chest Wall Collaborative Centers (CWCC) in order to align both surgical and non-surgical care. While many publications focus on operative outcomes, fewer publications (if any) evaluate the impact of CWCC on non-operative patients. Available data including all patients shows that these centers may lead to improved patient outcomes including lower mortality rates, reduced days on a ventilator, and shorter hospital stays at the cost of higher ICU utilization.

Methods

Our center, Cleveland Clinic Akron General, was designated a CWCC in 2020. Using data from our institution's trauma registry and available outcomes, we sought to evaluate the impact of this designation and associated training and practice management guidelines. Patients with rib fractures who presented to our center from 2016-2019 (Pre-Center) and 2020-2024 (Post-Center) were included. A total of 3677 charts were reviewed with 37% (n=1345) being pre-center and 63% (n=2332) post-center.

Results

ISS between groups were comparable. We have seen a decrease in ICU length of stay (5.8 vs 5.2 p < 0.001), decrease in vent days (7.4 vs 7.1 p = 0.16), decreased hospital length of stay (5.6 vs 5.31 p = 0.03), as well as reduced incidence of complications including ventilator associated pneumonia (12 vs 8 p = 0.04) and decrease in severe sepsis (20 vs 18 p = 0.04), but at the cost of increased ICU utilization (583 vs 931 p = 0.04).

Conclusion

Our data suggests the development of a CWCC positively impacted outcomes on non-operative patients. Greater efforts across CWCCs could increase transparency in these efforts and outcomes.