Trauma Patient Admission to Trauma Surgeons Is Associated with Decreased Length of Stay, Hospital Cost and Patient Complication

Zachary Bauman, DO FACS, Sophie Cemaj, BS, Brett H Washel, MD, FACS
University of Nebraska Medical Center, Omaha, NE

INTRODUCTION: Trauma patient management is complex, exacerbated by multiple injuries, socioeconomic issues, work/emotional stressors and daily life disruption. While it makes sense for trauma surgeons (TS) to admit these patients, literature is scarce comparing our management to non-trauma physicians (NTP). The purpose of this study is to explore these differences, hypothesizing TS admitted patients would have fewer complications with decreased hospital costs.

METHODS: IRB approved retrospective analysis of all adult (18-99 year-old) trauma patients admitted to our Level 1 center from 1/2017 through 1/2019 who did not require intensive care unit stay. Patients were grouped into TS vs NTP admissions. Outcomes evaluated included basic demographics, hospital length of stay (HLOS), direct patient costs, complications (based on TQIP guidelines), and discharge location. T-test, Chi square, and linear regression modeling were performed with significance set at $p < 0.05$.

RESULTS: 1,481 patients (1,076 admitted by TS and 405 by NTP) were analyzed. Patients admitted to TS were younger. Overall, ISS between groups were similar; however, most patients admitted patients would have fewer complications with decreased hospital costs.

CONCLUSION: Patients admitted to TS are associated with decreased HLOS, direct costs, and complications. Furthermore, HLOS and disposition location are independent predictors of direct costs.

A Trend Toward More Pigtails and Less Chest Tubes with Similar Outcomes

Matthew Bronstein, MD, Ilya Shnaydman, MD, Kartik Prabakaran, MD, FACS, Douglas James, MD, Shekhar Gogna, MBBS, Jeffrey N Baum, BS, Joshua R Klein, DO, Peter Rhee, MD, FACS
Westchester Medical Center/New York Medical College, Valhalla, NY

INTRODUCTION: Classically, chest tubes (CT) (28-40F) are used using an open cut-down technique for pneumo or hemothorax in trauma. Pigtails catheters (PC) inserted percutaneously, using Seldinger technique, can be an alternative as prior studies demonstrate effectiveness, but with decreased pain and morbidity.

METHODS: This retrospective study using an institutional trauma registry includes all adult patients (age > 15) who required tube thoracostomy for hemothorax, pneumothorax and/or hemopneumothorax from 2015-2020. The primary outcome studied was need for repeat intervention (requirement for additional tube thoracostomy, and operative intervention). PC were placed by the trauma surgeons and the reason for the use of PC was based on attending preference.

RESULTS: Over the five years 375 patients were identified as needing tube thoracostomy. 136 (36%) patients that had placement of PC vs 239 (64%) patients having CT placed. The frequency of PC increased significantly from 16.2% in 2015 to 62.3% in 2020. The need for additional intervention was 18% (25/136) in the PC group vs 28% (26/239) in the CT (p = 0.1). Repeat intervention was similar for additional CT (15% vs 16%) and the need for video assisted thoracotomy (5% vs 10%). The need for thoracotomy was lower in the PC group (0 vs 10%, p < 0.01).

CONCLUSION: PC usage increased over the study period and had similar outcomes to CT with respect to need for further interventions, including additional tube thoracostomy placement, and operative intervention. Pigtails are an effective and safe alternative to chest tubes in select groups of thoracic trauma patients.

An Administrative Burden: Identifying Designated Trauma Centers in Administrative Data

Whitney Orji, BS, Aria Xiong, MS, Justin Hatchimonji, MD, Elinore J Kaufman, MD, Daniel N Holena, MD, FACS
Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA

INTRODUCTION: Understanding the role of NTCs in injury care is essential, but many nationally representative administrative data sources do not identify TCs. We hypothesized we could use center-level patient and hospital characteristics to classify TCs in administrative data.

METHODS: We used State Inpatient Databases (SID) for Florida, New York, and Kentucky for 2016. We linked them to the 2016 AHA Annual Survey to identify TCs. We used ICD10 codes to identify injured patients. Candidate predictors included number and percentage of trauma patients and trauma transfers in and out. The outcome of interest was level I/II TC status, which we independently verified. We derived predictive models in a training