Background

Early recognition and treatment of traumatic upper extremity nerve injuries are paramount to optimize patient outcomes. Currently, a knowledge gap remains in regards to classification, distribution and variations in care delivery of nerve injuries treated in the emergency department (ED). The aim of this study is to evaluate patient demographics, injury characteristics, care delivery, and resource utilization in traumatic upper extremity nerve injuries in the acute setting in the United States.

Methods

We queried the National Trauma Data Bank (NTDB), the largest aggregation of U.S. trauma registry data, to identify all patients with nerve injuries of the upper extremity presenting to the ED in 2015. Patient sociodemographic information, injury specifics, and hospital characteristics were extracted for each patient. Multivariate regression analyses were performed to identify and quantify risk factors affecting ED time and hospital length of stay.

Results

A total of 5,742 patients with upper extremity nerve injuries were identified. Distribution of most commonly injured nerve in order of decreasing frequency included: ulnar (28%), radial (22%), median (20%) and digital nerves (19%). Total ED time was significantly higher in females (P=0.002) and patients with increased age (P=0.004). Hospital stay was longer for females (P=0.004), patients of increased age (P<0.001), and those with a higher injury severity score (P<0.001).

Conclusion

Our study identified specific patient and hospital-level factors associated with increased wait time and length of the stay in the hospital setting for acute peripheral nerve injuries.

Future studies, particularly those with longer follow-up time that describe patient outcomes, are needed to facilitate better understanding of the interplay of these identified factors and how they effect initial management and treatment.