

Epidemiology of Thoracolumbar Fractures in the U.S from 2001-2019: Patient-Related Trends, Mechanisms of Injury, and Dispositions

Thoracolumbar (TL) fractures if a critical but common reason for admission to the emergency department (ED) but epidemiological data on thoracolumbar fractures presented in the ED are limited. We evaluate patient demographics, mechanism of injury (MOI) and disposition to note trends in TL fractures over two decades. The NEISS was queried to identify all patients with TL spinal injuries presented to emergency departments from 2001-2019. Available patient demographics (age, sex, and race, disposition and mechanism of injury) related to each incidence were analyzed. For MOI, the categories were falls, jumps, firearms, and Other (e.g. electrical appliances, vehicles, and household items) based on narrative information. Data from the US Census were used to determine the estimated cases over time and incidence rates (IR) by age, sex and race per year. A total of 5533 patients were identified. An estimated total of 204,450 TL fractures occurred (IR32.3). The mean age is 62.4 (2-103). 0.5% of TL fractures occurred in patients aged 2-9 (IR1.42), 7.3% in patients aged 10-19 (IR17.6), 6.1% in patients aged 20-29 (IR 14.3), 6.9% aged 30-39 (IR17.3), 7.7% aged 40-49 (IR18.4), 10.7% aged 50-59 (IR25.8), 11.7% aged 60-69 (IR36.6), and 16.2% aged 70-79 (IR87.9) and 32.7% aged 80+ (IR291). Furthermore, 44.1% of TL fractures occur in male patients while 55.8% occur in female patients. Data on race is available for 57.8% of patients: 86.1% of patients were white, 5.4% were black. By MOI, falls were 70%, 11% cases from sports/exercise, 2% from jumps, 0.1% from firearms, and the last 18% from Other causes. Admission following treatment was most common (49.8%), release with/without treatment (43.5%), and treated/transferred (4.2%). The incidence rate persons-year is greater as the patients' age increases. The most common cause of TL fractures is due to fall injuries. Further studies involving interventions in addition to thorough geriatric screening are important to reduce preventable injuries.