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Epidemiology of Thoracolumbar Fractures in the United States between 2001 and 2019: Patient-Related Trends, Mechanisms of Injury, and Dispositions

Epidemiological data on thoracolumbar fractures in the emergency department setting are limited. Such data can be useful in informing management techniques. In this study, specifically, we evaluate patient demographics, mechanism of injury, and disposition to evaluate for trends in thoracolumbar fractures over eighteen years. Between 2001 and 2019, a total of 4952 patients who presented to the Emergency Department with thoracolumbar fractures were identified. There is an estimated total of 190,568 thoracolumbar fractures that occurred during this time frame, with an IR of 30.1. The mean patient age is 64.2 ± 21.2 , minimum age of 18 and maximum age of 103. 4% of thoracolumbar fractures occurred in patients aged 18-24, 6.9% in patients aged 25-34, 7.7% in patients aged 35-44, 10.0% aged 45-54, 13.2% aged 55-64, 13.1% aged 65-74, 22.3% aged 75-84, and 22.3% aged above 85. Furthermore, 42.1% of thoracolumbar fractures occur in male patients while 57.9% occur in female patients. Data on race was available for 57.8% of patients. Of the available data, 87.6% of patients were white, and 4.5% were black. By mechanism of injury, thoracolumbar spinal fractures in 2001 to 2019 resulted from falls (74%), sports and exercise (6.6%), jumping (1.5%), firearms (0.1%), and other (17.9%). In terms of disposition, admission following treatment occurred in 52.5% of cases, followed by release with or without treatment in 40.6% of cases, and treated and transferred in 4.2% of cases. The incidence rate in person-years is greater as the patients' age increases. As for mechanism of injury, the most common cause of thoracolumbar fractures is due to fall injuries. The second most common mechanisms are other, followed by sports and exercise. Lastly, most cases were admitted for treatment. By studying epidemiology of thoracolumbar fractures, we can better manage these traumatic cases as well as preventive measures. Further studies may be needed to assess associations and targeted treatment.