WHITE WOMEN BETWEEN 80-89 HAVE SIGNIFICANTLY HIGHER RISK FOR PAINFUL AND DEBILITATING SPINE FRACTURES IN U.S.

Falls are the Most Common Culprit

LOS ANGELES, CA—Cervical and thoracic spine fractures are on the rise, particularly in white females between 80 and 89 years of age, according to a new study reported at the 33rd Annual Meeting of the North American Spine Society (NASS). During the last decade, the incidence of fractures of the cervical and thoracic spine jumped from 10,020 to 18,168 annually. Fifty-seven percent of fractures occurred in women. More than three-quarters of all cervical and thoracic fractures were caused by falls.

“Spine fractures significantly impact patients’ quality of life, yet until now we have not had sufficiently powered studies to accurately point to the causes and epidemiological trends involved,” said Neil V. Shah, MD, MS, the study’s lead author. “If we can identify factors, such as age, gender or a particular activity that can increase the risk for a fracture, we can try to prevent injuries and help patients quickly get appropriate care if they do become injured.”


The National Electronic Injury Surveillance System (NEISS) database was used to identify all patients who visited the emergency department (ED) between January 1, 2007 and December 31, 2016 and were diagnosed with a cervical and/or thoracic spine fracture. The data were stratified by demographic variables and the mechanism of injury. The nationwide estimation of frequency and incidence rates by age, sex and race were determined using NEISS weight calculations and 2007-2016 US Census data. Temporal trends of injuries were analyzed using descriptive statistics and linear regression.
An estimated total of 131,176 fractures were identified, with approximately 95.4% involving the thoracic region, 4.7% involving the cervical region, and 1.2% involving both. Single-level fractures were reported in 91.1% of the cases, while 8.86% were reported as multi-level fractures. The annual estimated number of these type of fractures increased from 10,020 in 2007 to 18,168 in 2016 (Beta=0.89, p<0.001). The incidence of cervical and thoracic spine fractures was estimated to be 0.419 per 10,000 person-years. The most common mechanism of injury resulted from falls (77.4%), followed by lifting (2.9%), twists/bends (2.0%), trauma (7.1%), and other (10.5%). Patients 80 years and older had an incidence rate of 3.63 per 10,000 person-years, the highest among age groups. Fifty-seven percent occurred in women (incidence rate of 0.48 per 10,000 person-years), while 43% of fractures occurred in men (incidence rate, 0.36 per 10,000 person-years). Race data were available for 71% of the subjects, and incidence rates of these injury types were 0.33 per 10,000 person-years in whites, 0.08 per 10,000 person-years in blacks, and 0.20 per 10,000 person-years in all others. When reviewing disposition after ED visit, hospital admission rates of cervical and thoracic spine fractures increased from 37.0% in 2007 to 43.8% in 2016, but this was not significant (Beta=0.56, p=0.09).

As follow-up to this study, the researchers will further explore this same dataset, but they will also expand the years they study to better understand these trends and identify any longitudinal patterns. They also hope to better identify data related to the neurological status at presentation of such patients to identify any correlations between demographic factors and neurological injuries.

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This abstract does not discuss or include any applicable devices or drugs. The NASS 2018 Disclosure Index can be found on pages 174-194 of the NASS 33rd Annual Meeting’s final program.

More than 3,000 spine professionals will meet at the NASS 33rd Annual Meeting in Los Angeles, September 26-29, 2018 at the Los Angeles Convention Center to share the latest information, innovative techniques and procedures, best practices and new technologies in the spine field. NASS is a multidisciplinary medical organization dedicated to fostering the highest quality, evidenced-based and ethical spine care by promoting education, research and advocacy. NASS is comprised of more than 8,000 members from several disciplines, including orthopedic surgery, neurosurgery, physiatry, neurology, radiology, anesthesiology, research and physical therapy. For more information, visit www.spine.org, NASS Facebook and NASS Twitter.

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