

**Geriatric vertebral compression fracture:  
Characterizing use and trends for prescribed thoracic/lumbar orthoses**

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**Introduction:**

Geriatric vertebral compression fractures are the most common fracture associated with osteoporosis. While bracing may be considered, its use is variable and trends for utilization have not been characterized. Using a large national database, the current study aimed to examine and characterize bracing trends for geriatric thoracic/lumbar compression fracture management.

**Methods:**

The current study utilized M157 PearlDiver database from 2015-2021. Patients who suffered thoracic/lumbar compression fractures (5<sup>th</sup> thoracic to the 5<sup>th</sup> lumbar vertebra [T5-L5]) were identified. Exclusion criteria included patients less than 65 years old or a diagnosis of infection or neoplasm within the 90-days before the compression fracture.

Patients who received a brace within 90-days after the initial diagnosis of thoracic/lumbar compression fracture were abstracted and characterized overall and by fracture level. Multivariable logistic regression was performed for the following variables to assess for correlation with bracing trends: age, sex, Elixhauser-Comorbidity Index (ECI) and geographic region (Northeast [NE], South [SO], Midwest [MW], and West [WE]).

**Results:**

In total 290,388 patients met inclusion criteria and suffered a thoracic/lumbar compression fracture (greatest incidence at the thoracolumbar junction). Of these, bracing was only prescribed for 4,263 (1.5%), with the greatest difference of 1.5% by level (Figure 1).

Independent predictors of bracing were geographic region (relative to northeast, west WE odds ratio [OR] 1.31, Midwest OR 1.20), younger age (OR 1.27 per decade), female sex (OR 1.17), and ECI (OR 1.02 per 2-point increase) ( $p < 0.05$  for each).

**Discussion:**

Overall, the current study examined over a quarter of a million patients who suffered a T5-L5 compression fractures and found that only 1.5% of patients were braced. This low percentage, and the fact that greatest predictor for bracing was non-clinical (geographic region), highlight the inconsistency of this practice and may be useful for developing treatment algorithms.

**Significance/Clinical Relevance:**

Overall, the current study examined over a quarter of a million patients who suffered a T5-L5 compression fractures and found that only 1.5% of patients were braced. This low percentage, and the fact that greatest predictor for bracing was non-clinical (geographic region), highlight the inconsistency of this practice and may be useful for developing treatment algorithms.

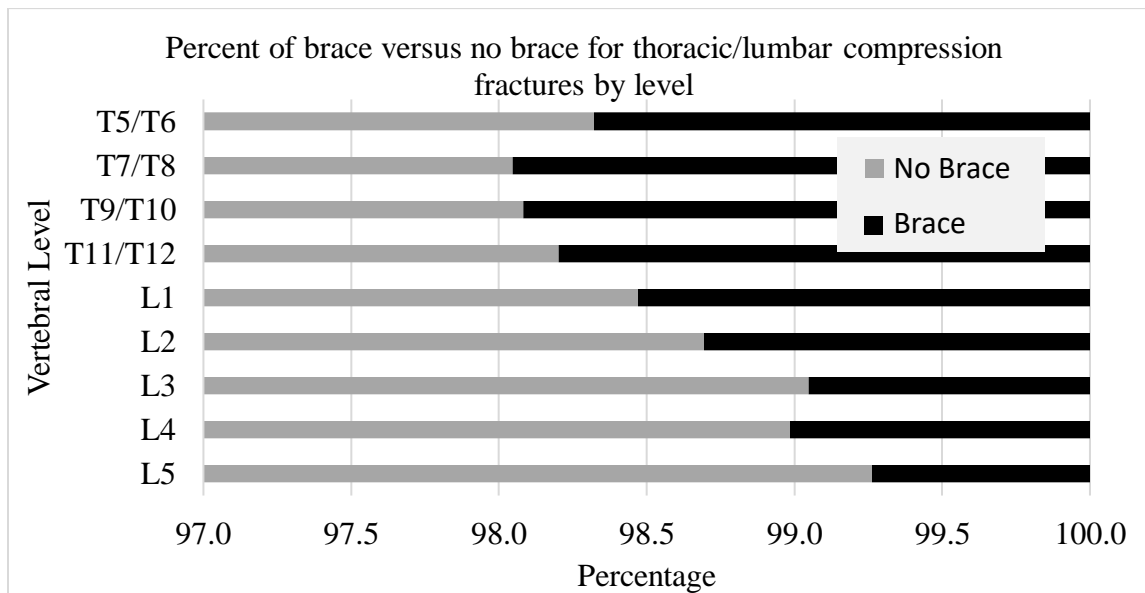


Figure 1: This stacked horizontal bar graph shows visually the percentage of brace (black) versus no brace (grey) by vertebral level from Table 1.