

Characterization of neuropathic component of back pain in patients with vertebral fragility fractures

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Abstract

Background

Vertebral fractures are the most common osteoporotic fractures. These fractures condition may be associated with chronic back pain, disability, and an increased risk of new vertebral and non-vertebral fragility fractures. It has been hypothesized that not only nociceptive pain, but also neuropathic pain mechanisms might be involved in the occurrence of back pain associated to vertebral fragility fractures. However, literature about characterization of the neuropathic component of chronic spine pain in patients with vertebral osteoporotic fractures is lacking. Therefore, the objective of this study is to evaluate the type of vertebral pain in a population of patients with vertebral fragility fractures.

Methods

We included patients with a history of at least one vertebral fragility fracture that occurred since at least three months from the enrollment. Vertebral fractures were detected by morphometric examination, performed at the Physical Medicine and Rehabilitation Unit of the University of Campania Luigi Vanvitelli. Genant's classification was used to characterize the type and the severity of vertebral deformity. Pain severity and its impact on daily living activities were assessed through the Brief Pain Inventory (BPI). The presence of neuropathic pain in our population was assessed through the Italian Versions of the Leeds Assessment of Neuropathic Symptoms and Signs pain scale (LANSS) and the painDETECT questionnaire.

Results

Thirty-six patients were included. Our population consisted mainly of women (92%). The mean age was 69.5 years. The 75% of patients had multiple vertebral fractures, 25% one vertebral fracture. In the sample of patients with one vertebral fracture, 55.5% of these lesions was localized at the thoracic spine while the remaining 44.4% was localized at the lumbar spine. Among patients with multiple vertebral fractures, 59.2% of these fractures involved the thoracic and lumbar spine, 33.3% the thoracic spine only, and 7.4% the lumbar spine only. The BPI Severity Index showed mild spinal pain (score 1-4) in 66.6% of patients, moderate (score 5-6) in 30.5% of cases and severe (score 7-10) in 2.7% of cases. The BPI Interference Index showed a low (score 1-4) interference of pain with daily living activities in 77.7% of cases, high (score 5-10) in 22.2% of cases. The painDETECT questionnaire revealed that nociceptive pain is present in 80.5% of cases, mixed pain in 13.8%, neuropathic pain in 5.5% of cases. The LANSS pain scale showed that the presence of a neuropathic mechanism is probable in 27.7% of cases.

Conclusion

In patients with vertebral fragility fractures, chronic back pain has a neuropathic or mixed component in 19.3% according to the painDETECT questionnaire and in 27.7% of cases according to the LANSS scale. In our study, the LANSS scale was found to be more sensitive than the painDETECT questionnaire in identifying the neuropathic component of chronic back pain in this population.

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Abstract

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