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Prevalence of established vertebral fragility fractures in patients admitted with acute hip fracture

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Introduction

Osteoporotic hip fracture carries a significant mortality risk with 6.1% of patients dying within 30 days of fracture and one-third within 12 months.[1,2] Fracture liaison services (FLS) identify fragility fractures and intervene with appropriate assessment and treatment for further prevention of fragility fractures.[3,4] Only approximately 6% of vertebral fragility fractures are identified by FLS through routine case finding.[5] However, many diagnostic imaging tests include the spine, which provides a valuable opportunity to identify patients at risk of fracture.

Methods

Nottingham University Hospitals NHS Trust has a well-established orthogeriatric service and we decided to use our local data on the National Hip Fracture Database (NHFD) to identify the imaging history of 245 consecutive patients admitted with acute hip fracture between December 2019 and July 2020 to find out how many of these patients had evidence of established vertebral compression fractures (VCFs) on cross-sectional imaging in the preceding 5 years before admission. Indications for the investigation were noted as unrelated to bone health (including malignancy), trauma or vertebral fracture. Data were obtained about history of known osteoporosis, prior osteoporosis treatment, cross-sectional imaging in the preceding 5 years before hip fracture, the number and type of vertebral fractures detected etc. Using our hospital IT systems, information was obtained from their electronic discharge summary following hip fracture as well as reports of their cross-sectional imaging (computed tomography / magnetic resonance imaging) and their indications in the preceding 5 years prior to hip fracture.

Results

The median age was 84 years; 165/245 (67%) were women; 49/245 (20%) had known osteoporosis; 19/49 (39%) weren't on any treatment; 20 patients were on antiresorptives (15 on oral bisphosphonate, three on intravenous bisphosphonate and two on denosumab); and 84/245 (34%) underwent cross sectional imaging in the preceding 5 years, out of which, 27 (32.1%) were found to have osteoporotic vertebral fractures with 14 (52%) having two or more VCFs. Of the 27 patients with VCFs, nine weren't on any treatment while 13 patients were on calcium and vitamin D supplements alone. Interestingly, nine (33%) of these patients had evidence of symptomatic VCFs as per request for imaging carried out in the 5 years prior to hip fracture.

Conclusion

Eleven per cent of hip fracture patients in this study had evidence of prior vertebral fragility fracture and a missed opportunity for secondary fracture prevention. They represent a subset of patients with a greater risk of future fractures.[6] The study did not scrutinise the imaging to verify report findings or identify vertebral fractures that were unreported or missed and, therefore, results and prevalence might be an underestimate. There is a need for radiology to alert all incidental VCFs to the fracture liaison service that would help in prompt assessment and management of their osteoporosis and reduction of their future fracture risk. ■

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