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Survival of opportunistically identified patients with vertebral fractures using existing CT scans: do they survive long enough to potentially benefit from fracture prevention interventions?

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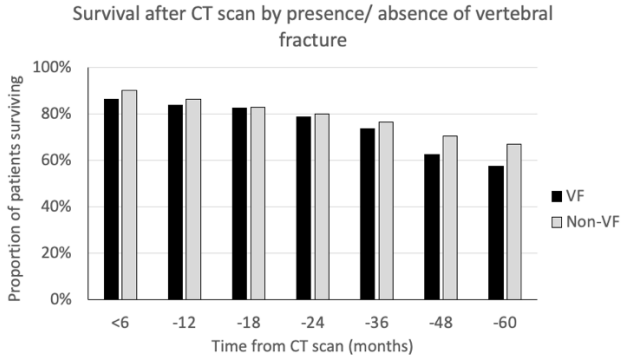
Background: Vertebral fractures increase morbidity, mortality and fracture risk. Despite effective interventions, most patients remain untreated. One recommendation for improving identification is re-reading existing CT scans that include the spine. However, these patients often have significant comorbidities. It is not clear how many patients survive long enough to potentially benefit from fracture prevention interventions.
Purpose: To describe survivorship of patients with vertebral fractures identified by opportunistic re-reading of existing CT scans.
Methods: Consecutive CT scans of adults aged 50 and over from 1st October 2017 were re-read by clinicians (JB,JT) with experience in identifying vertebral fractures using the grade 2/3 semi-quantitative Genant score. Date of death was extracted from the hospital record system. Log-rank tests were used to test for survival differences.
Results: 611 consecutive scans were re-read. 54% were women and the mean age was 71.3 (SD 11.5). The commonest scan types were "CT Abdomen and Pelvis with contrast" (n=307) and CT thorax (n=183). Eighty (13.1%) scans were identified containing at least one vertebral fracture. Of these, 39 (48.8%) were mentioned in the radiology report, with 18 (22.5%) using the term "vertebral fracture". 210 (34.4%) patients had died since their scan with 13.9% dead by 12 months and 20.1% dead by 24 months. Patients with vertebral fractures did not have significantly higher mortality up to 60 months (42.5% vs 33.2%, p=0.1). The survival of patients with or without index vertebral fractures is shown in Figure.
Conclusion: In this audit population, most patients with vertebral fractures diagnosed using their 2017 CT scans survived more than 3 years. The CT-attending population should benefit from interventions to prevent future fractures. Recognising not all deaths are recorded at the local hospital, further work includes accessing the NHS Welsh Clinical Portal for more accurate survival status.

Figure


Survival after CT scan by presence/ absence of vertebral fracture
Proportion of patients surviving
100%
80%
60%
40%
20%
0%
<6
-12
-18
-24
-36
-48
-60
Time from CT scan (months)
VF
Non-VF