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Identifying skeletal-related events for prostate cancer patients in routinely collected hospital data

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Background:
• Non-osteoporotic skeletal-related events (SREs) are clinically important markers of disease progression in prostate cancer.
• We developed and validated an approach to identify SREs in men with prostate cancer using routinely-collected data.

Methods:
• Patients diagnosed with prostate cancer between January 2010 and December 2013 were identified in the National Prostate Cancer Audit, based on English cancer registry data.
• A coding framework was developed based on diagnostic and procedure codes in linked national administrative hospital and routinely-collected radiotherapy data to identify SREs occurring before December 2015.
• Two coding definitions of SREs were assessed based on whether the SRE codes were paired with a bone metastasis code (‘specific definition’) or used in isolation (‘sensitive definition’).
• We explored the validity of both definitions by comparing the cumulative incidence of SREs from time of diagnosis according to prostate cancer stage at diagnosis.
Results:

• We identified 40,063, 25,234 and 13,968 patients diagnosed with localised, locally advanced and metastatic disease, respectively.

• Using the specific definition, we found that the 5-year cumulative incidence of SREs was 0.9% in patients with localised disease, 5.4% in patients with locally advanced disease, and 38.8% in patients with metastatic disease.

• Using the sensitive definition, the corresponding cumulative incidence figures were 8.4%, 13.4%, and 40.7%, respectively.

Conclusions:

• When stratified by prostate cancer stage the cumulative incidence of SREs, according to our specific definition, supports their validity as a clinically important marker of cancer progression.