INTRODUCTION

Computerised GP patient records are a source of comprehensive health data. Not many studies have looked into effective use of electronic patient records for population screening of patients at risk of fragility fractures and osteoporosis. This feasibility study establishes that screening patient populations at the highest risk is entirely feasible using information from electronic patient records. Moreover, it is an efficient way of targeting patients for primary prevention of osteoporosis resulting in effective utilization of healthcare resources.

AIMS AND OBJECTIVES

- Screening patient populations at risk of osteoporosis and fragility fractures using electronic patient records.
- Risk-stratify these patients and categorise them into cohorts based on their risk profile.
- Target the most ‘at risk’ group with primary prevention measures.

METHODS AND MATERIALS

47988 primary care electronic patient records were analysed using standard computerised algorithms compatible with the EMIS electronic patient records (Figure 1). Search was carried out for patient cohorts at risk of osteoporosis including those who had fragility fractures. Fracture risk assessment was done using the FRAX® fracture probability tool without Bone Mineral Density values (Figure 2). Patients with a high risk of osteoporosis and fragility fractures who met the NOGG criteria for treatment without the need for bone mineral density measurement (2) were identified (Figure 3).

RESULTS

15201 (31.68%) patients met the criteria for the risk group of osteoporosis as detailed in the NICE guidance CD 146 (4) and NICE Quality Statement QS 145 (5). Based on the fracture risk assessment, which was done remotely without the need for individual patient contact, 977 (6.4%) patients met the ‘treat’ criteria. 6363 (41.9%) patients fell into the ‘assess’ and 7727 (47.8%) were in the ‘reassure’ categories of NOGG guidance respectively. 3.8% of patients had incomplete records (Figure 4). S45 (3.58%) patients of the ‘treat’ group, at an average of 133 per practice (113/10000 population), who had fragility fractures were identified (Figure 5). These patients met the ‘treat’ criteria. 6363 (41.9%) patients fell into the ‘assess’ and 7727 (47.8%) were in the ‘reassure’ categories of NOGG guidance respectively.

DISCUSSION

Applying multiple search algorithms that incorporate the clinical risk factors for osteoporosis, is a good way of identifying patients ‘at risk’ from the electronic patient records. Having identified these risk groups, the second step of fracture risk assessment (FRAX®), further stratifies the patient population into those in the ‘treat’, ‘assess’ and ‘reassure’ cohorts as per the NOGG Criteria (2). Patients in the ‘treat’ criteria group should be prioritised for management. Their numbers are manageable and unlikely to put significant pressures on manpower or time resources for the practices. By targeting this group with primary prevention measures, which include lifestyle advice and treatment with bisphosphonates, it has been estimated, that, about 31 hip fractures could be prevented over a four year period.

CONCLUSIONS

- Identifying patients in the ‘treat’ category for osteoporosis by using the FRAX tool is a cost-effective way of targeting primary prevention.
- Data can be captured, without physical screening of patients. The software is compatible across all Electronic Patient records.
- Risk-stratification in this manner creates manageable cohorts whose can be prioritised according to capacity.
- This approach would optimise treatment, reduce future fractures, not put additional pressures on manpower or material resources, and deliver cost-savings for health and social care budgets.

References