

lors and the need to ensure that session costs do not jeopardise cost effectiveness.

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Quantitative ultrasound and risk factor enquiry as predictors of postmenopausal osteoporosis: comparative study in primary care

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The current recommendation for primary care physicians to identify women at high risk of osteoporosis relies on the assessment of clinical risk factors as a selection method for referral for dual energy x ray absorptiometry (DXA).¹ DXA remains the "gold standard" diagnostic investigation for osteoporosis, but the restrictions of cost and availability necessitate an effective selection process. Little evidence exists about the value of enquiring about risk factors in primary care as a selection method, but it has been reported to be a poor predictor of low bone mass.² Quantitative ultrasound scanning can be used to predict risk of osteoporotic fracture.³ Preliminary findings indicate that ultrasound scanning is as good as clinical risk factors for prediction of osteoporosis, but its role in primary care has yet to be clarified.⁴ We compared these selection methods in postmenopausal women in a primary care setting.

Participants, methods, and results

We assessed 200 consecutive women aged 60-69 years attending a primary care clinic between April 2000 and July 2002. Seven general practices in South Warwickshire referred women because of perceived risk (48%) or interest (52%). An experienced practice nurse completed a risk factor questionnaire, calculated body mass index, and did a heel ultrasound scan (Sahara densitometer). One general practitioner interviewed the women to clarify details and referred the

women for DXA scanning of the hip and lumbar spine at a local hospital.

We deemed risk factor status to be positive if at least one criterion for referral for DXA according to the 1999 Royal College of Physicians' guidelines was present.⁵ We expressed quantitative ultrasound measurement as a T score and chose the level defining the lowest quarter of readings to assess sensitivity and specificity, as no agreed cut-off point for referral for DXA exists.

We obtained complete data for 190 women, of whom 31 (16.3%) had osteoporosis on DXA scan. We classified 113 (59.5%) women as risk factor positive—body mass index <19 kg/m² (5), height loss >2 inches (5 cm) or kyphosis (5), maternal hip fracture (20), early menopause or hysterectomy <45 years (40), secondary amenorrhoea >1 year (5), prednisolone 7.5 mg >6 months (10), fracture after age 50 (43), x ray osteopenia (28), medical condition associated with increased risk of osteoporosis (13). Forty nine (25.8%) women had an ultrasound reading below T = -1.7.

Risk factor enquiry was a poor predictor. Only 19% of women with risk factors had osteoporosis, and this method failed to identify one third of the osteoporotic women (table). However, ultrasound scanning with a cut-off point of T = -1.7 almost doubled specificity compared with risk factors (McNemar's test P=0.006, 95% confidence interval 31% to 49%) for roughly the same sensitivity. Adding an ultrasound scan to risk fac-

Comparison of assessment of risk factors and quantitative ultrasound scanning as predictors for osteoporosis on dual energy x ray absorptiometry scan

Measures of accuracy	Risk factors		Ultrasound T score < -1.7		Risk factors, T score < -1.7, or both	
	No	% (95% CI)	No	% (95% CI)	No	% (95% CI)
Sensitivity	21/31	68 (50 to 82)	22/31	71 (54 to 85)	28/31	90 (77 to 98)
Specificity	67/159	42 (35 to 50)	132/159	83 (77 to 88)	60/159	38 (30 to 45)
Positive predictive value	21/113	19 (12 to 26)	22/49	45 (32 to 59)	28/127	22 (15 to 30)
Negative predictive value	67/77	87 (78 to 93)	132/141	94 (89 to 97)	60/63	95 (88 to 99)

tors improved sensitivity by 22% (P=0.015, 8% to 37%) and reduced specificity by 4% (P=0.015, -8% to -1%). This enabled identification of 90% of the women with osteoporosis and increased prediction for women without the condition.

Comment

The combination of quantitative ultrasound scanning and enquiry about risk factors detected more cases of osteoporosis and had slightly better predictive values than risk factors alone. Ultrasound alone had much better specificity than risk factors alone. However, good clinical practice requires an overall assessment of risk for osteoporosis rather than ultrasound scanning as a stand alone procedure. Ultrasound scanning is a simple, quick, non-ionising, portable, and inexpensive investigation. It provides general practitioners with an opportunity to improve on the current method of identification of risk of osteoporosis and selection for DXA and is an ideal test for practice nurses to perform in a nurse led osteoporosis clinic. Further evaluation of quantitative ultrasound scanning and assessment of its cost effectiveness are warranted.

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A memorable patient

Polypharmacy remains an issue in elderly patients

She had metastatic adenocarcinoma of unknown origin and was admitted to the hospice for rehabilitation. She had taken to her bed in a darkened room some weeks previously, and had no interest in anything. The consultant discussed antidepressants with her, but she was reluctant, partly because she had coped with a number of traumatic events in her life previously without needing them, and also because she didn't feel she was depressed. "I want to smile, but my face just won't move," she said. We stopped her haloperidol.

She came alive. Not only was she out of bed, she was independently mobile. I came across her in the sitting room avidly reading a magazine while knitting a scarf for the hospice shop. She began to talk about how she could manage at home by herself. Her daughter, who had been providing 24 hour care and had introduced herself to the consultant with the words "Hello, I'm the anxious daughter," also looked far better and went on holiday with her family. She was discharged successfully with some help from home care services.

I have no doubt that this success is in large part due to the hard work and commitment of the

multidisciplinary team. However, we came very close to starting another drug for the side effects of a current one. Polypharmacy remains an issue for elderly people and patients with complex needs. I was reminded of the need to look critically at all prescriptions, stopping any that are no longer required. Making appreciable impact on the quality of patients' lives with relatively small interventions will always be one of the joys of working in palliative medicine.

Becky Hirst *specialist registrar in palliative medicine*

We welcome articles up to 600 words on topics such as *A memorable patient*, *A paper that changed my practice*, *My most unfortunate mistake*, or any other piece conveying instruction, pathos, or humour. If possible the article should be supplied on a disk. Permission is needed from the patient or a relative if an identifiable patient is referred to. We also welcome contributions for "Endpieces," consisting of quotations of up to 80 words (but most are considerably shorter) from any source, ancient or modern, which have appealed to the reader.