Title	Diagnostic Performance and Cost Effectiveness of Technologies to Measure Bone Mineral Density in Postmenopausal Women
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Aim

To study the effectiveness of technologies to assess bone mineral density (BMD) in diagnosing osteoporosis.

Conclusions and results

The studies reviewed do not show major differences between central dual-energy x-ray absorptiometry of the hip (DXA) and qualitative ultrasonography (QUS). Quantitative computed tomography (QCT) seems to be at least as effective as DXA. QCT, however, uses more radiation than DXA. Overall, QUS seems to be comparable to DXA for discriminating fractures in postmenopausal women, although this is based on low-quality evidence.

Three studies reported on costs of technologies to measure BMD. A study from Thailand reported the cost-effectiveness ratio in US dollars to be USD 88.42 per fracture prevented for DXA and USD 146.48 per fracture prevented for QUS. A US study found DXA to cost USD 703 000 per 1000 women to prevent 7.8 hip fractures, QUS cost USD 632 000 per 1000 women to prevent 6.7 hip fractures, and sequentially testing by QUS then DXA cost USD 442 000 per 1000 women to prevent 5.7 fractures. A Spanish study found that the total cost per correctly detected case of osteoporosis was EUR 23.85 for DXA and EUR 22.00 for QUS.

Recommendations

None given.

Methods

Published literature was identified by cross searching Biosis, EMBASE, and MEDLINE databases on the OVID search system. Parallel searches were performed in the Cochrane Library (Issue 2, 2007) databases. One reviewer selected articles and extracted data.

Further research/reviews required

Because of the limited availability and the cost implications of DXA devices, an assessment of the effectiveness of alternative devices is needed to determine their usefulness in predicting the fracture risk in postmenopausal women.

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