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Postmenopausal osteoporosis

Osteoporosis is more common in postmenopausal women than in men of similar age. In those women who are not treated for menopause are more likely to develop bone loss and an increase in minimal trauma fractures. The current recommendations are that bone mineral density (BMD) should not be assessed before age 65 but one or two programs recommend an age 60 for the first Dual Energy X-ray Absorptiometry (DXA). Women who have additional post-menopause medical conditions and/or medications may have increased risk of minimal trauma fractures before age 60. DXA studies should be accompanied by laboratory studies that include serum calcium, serum creatinine, and 25 hydroxyvitamin D, as well 24 hour urine collection for calcium, creatinine, sodium, uric acid, and oxalate. Management is dependent on the bone density and biochemistry. The biochemistry includes markers of bone resorption i.e., C-terminal telopeptide of type 1 collagen (CTX), and bone formation i.e., bone alkaline phosphatase (B-ALP), C-terminal propeptide of type 1 procollagen (P1CP) and N-terminal propeptide of type 1 procollagen (P1NP). Regrettably the majority of DXA studies are performed and reported by bone density technicians and clinicians who have not been appropriately trained in the conduct and reporting of DXA and therapy is often incorrect. Once diagnosed as osteoporosis, there are several anti-resorption products that have been approved by the FDA or are in progress and teriparatide has been approved for stimulation of bone formation. Once a diagnosis of osteoporosis and appropriate therapy has been established, measurement of biochemical markers should be obtained at 6 monthly intervals until the levels are stable. If bone density is stable for five years, the therapy can be discontinued and biochemistry analyzed at 6-12 monthly intervals. More recent studies in progress include high resolution measurement of the distal radius and tibia using either high resolution Magnetic Imaging (hrMRI) or high resolution Dual energy X-ray Absorptiometry (hrDXA). hrDXA is also being study in the spine and proximal femur. These studies provide improved evaluation of skeletal health. Details of the above aspects of skeletal studies are shown in the accompanying illustrations and images.

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