Necessity of Osteoporosis Screening in Postmenopausal Women

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Osteoporosis is defined as Bone Mineral Density (BMD) more than 2.5 Standard Deviations (SD) below the mean for a young healthy adult woman. While osteopenia is BMD between 1 and 2.5 SD below the mean.

Osteoporosis is a silent disease. By the time any symptoms (Pain and fractures) became apparent, the disease is already far advanced. It is characterized with low bone mass and micro-architectural deterioration of bone tissue. Clinically there is increase in bone fragility and susceptibility to fracture. Most common sites of fracture are lumbar spine, thoracic spine, proximal femur and distal radius.

Factors increasing the risk of osteoporosis are low body weight,cigarette smoking, excess of alcohol and caffeine, lack of exercise, diet low in calcium and low estrogen levels due to menopause or surgical removal of ovaries. Prolonged immobility, hyperthyroidism hyperparathyroidism, heparin and long term use of corticosteroids also causes osteoporosis. This debilitating disease necessitate screening of osteoporosis in menopausal women. The U.S. Preventive Services Task Force (USPSTF) recommends that women aged 65 and older be screened routinely for osteoporosis. While screening should begin at age 60 for women at increased risk for osteoporotic fractures. For women 60-64 who are not at increased risk for osteoporotic fractures, the USPSTF makes no recommendation for or against the routine osteoporosis screening. Whereas American College of Obstetricians and Gynecologists recommends BMD testing with DXA beginning at age 65 years in all women and selective screening in postmenopausal women younger than 65 years who have osteoporosis risk factors or an adult fracture.

Selective screening should be done for evaluation all women aged 50 years or older for osteoporosis risk. Initial evaluation should include a detailed history,

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physical exam and clinical fracture risk assessment. For this purpose a Fracture Risk Assessment Tool (FRAX) has been developed. It is a sophisticated risk assessment instrument. It is developed by the University of Sheffield. It uses risk factors in addition to DXA measurements for improved fracture risk estimation. It aids clinical decision making and use of pharmacologic therapies in patients with low bone mass. FRAX should not be used for patients who have already received pharmacologic treatment for osteoporosis. Other tools include ORAI (Osteoporosis Risk Assessment Instrument) tool. It uses age, weight and current use of hormone replacement therapy to identify women at risk for osteoporosis. A score of > 9 warrents further investigations. It has sensitivity of 94% and specificity of 41%. Bone measurement tests for investigating osteoporosis include Dual Energy X-ray Absorptiometry (DEXA) peripheral bone densitometry devices and biochemical markers. DEXA is the best predictor of hip fracture and equivalent predictor of other fractures. The total hip, femoral neck, and posterior-anterior lumbar spine should be measured, using the lowest of the three BMD scores.

DEXA measures important sites of osteoporotic fractures with high precision and accuracy. It is relatively inexpensive with modest radiation exposure. DEXA results are interpreted using T score and Z score. T scores include comparison of result with the young adult mean. It relates to absolute fracture risk. Z scores compare result with reference values of the same age. It relates to the individual's relative risk for their age. T score represents the number of SD a patient is above or below the mean BMD Of a young adult. Normal is 2 -1. Osteopenia is when T score is -1 to -2.5. Osteoporosis when it is < -2.5. Severe Osteoporosis when T score is < -2.5 + History of fracture.

Testing may be repeated after a minimum of 2 years to reliably measure a change in bone mineral density. Patients with diagnosed osteoporosis may require additional testing to monitor response to treatment. Treatment includes balanced diet, dietry supplements and drug treatment. Diet high in fruits, vegetables, calcium and vitamins is recommended. Daily Calcium intake of 1,200 mg in divided doses with Vitamin D 800-1 ,000 IU per day for women aged 50 years and at risk of vitamin D deficiency is recommended.

All high risk patients particularly those with previous fracture are treated with Bisphosphonates as the first-line therapeutic Choice. Anabolic therapy (Teriparatide or abaloparatide) is considered for women at very high risk of fractures. Bone Mineral Density (BMD) of high-risk individuals with a low BMD will be reassessed every 1 to 3 years. While woman may never regain the bone density she had in her youth, Treating her will help prevent rapidly thinning bones, even after the diagnosis.

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