

DEXA BONE DENSITY - Details

Study Result

Narrative & Impression

DEXA Bone Mineral Densitometry

Clinical Indications: Postmenopausal, screening for osteoporosis, estrogen deficiency, history of left wrist fracture, HRT

Comparison: None

Technique: Bone Mineral Densitometry (BMD) by Dual Energy X-Ray Absorptiometry (DEXA) was performed utilizing the Hologic Discovery scanner. The lumbar spine was evaluated in the AP projection. The bilateral hips and right forearm were evaluated in the AP projection. Vertebral fracture analysis is performed.

AP Lumbar Spine: The L1, L2, L3 and L4 vertebral bodies were evaluated.

BMD: 0.766 g/cm²

T-score: -2.6 SD

Z-score: -1.3 SD

Trabecular Bone Score (TBS) L1-L4 : T Score = -2.5

AP Left Hip: Neck

BMD: 0.677 g/cm²

T-score: -1.6 SD

Z-score: -0.4 SD

AP Left Hip: Total

BMD: 0.844 g/cm²

T-score: -0.8 SD

Z-score: 0.0 SD

AP Right Hip: Neck

BMD: 0.682 g/cm²

T-score: -1.5 SD

Z-score: -0.3 SD

AP Right Hip: Total
BMD: 0.807 g/cm²
T-score: -1.1 SD
Z-score: -0.3 SD

AP Right Forearm , 1/3:
BMD: 0.540 g/cm²
T-score: -2.6 SD
Z-score: -1.4 SD

Vertebral Fracture Analysis: No significant compression fracture is identified.

Conclusion: Considering the lowest measured site, the patient is osteoporotic and at increased risk for fracture.

The ten year FRAX risk for any major osteoporotic fracture , which excludes the risk for a recurrent wrist fracture, is 11% and for a hip fracture is 1.1%.

Any bone loss in this patient is probably related to aging or estrogen deficiency.

Consider excluding secondary metabolic causes of bone loss (reported to be present in as many as 30% of patients with normal Z scores). Basic laboratory evaluation might include blood chemistries (calcium, phosphorus, alkaline phosphatase, liver function tests, creatinine, total protein), complete blood count, serum 25-OH- vitamin D3 level, 24-hour urine calcium, serum TSH and serum PTH. Targeted laboratory testing based on individual patient circumstances might include serum electrophoresis (SPEP or UPEP), anti-tissue transglutaminase antibody levels (celiac disease) , serum bone specific alkaline phosphatase, bone turnover markers (urine, serum) or fibroblast growth factor 23 (FGF 23)(evaluate for unexplained osteomalacia).

If secondary causes are excluded, then consider initiating treatment with a bisphosphonate (such as Fosamax, Actonel or Boniva). If the patient is unable to use an oral bisphosphonate, another agent such as IV bisphosphonates (Boniva or Reclast), teriparatide (Forteo), a selective estrogen receptor modulator (Evista) or Denosumab (anti RANKL monoclonal antibody) might be considered.

If antiresorptive therapy is initiated and if clinically indicated, consider obtaining a baseline and 3 month followup bone resorption marker (NTX, CTX, TRAP5b or Pyridinoline, deoxypyridinoline) to monitor the therapeutic effect.

Supplementing an insufficient diet to achieve total intakes of 1500 mg calcium and 800 International Units of vitamin D daily should be considered. Osteoporosis prevention and treatment begins by modifying risk factors. The patient should be encouraged to participate in a regular exercise program that includes weightbearing and muscle strengthening regimens, as is clinically appropriate.

Recommend follow-up DEXA in one year to assess the efficacy of pharmacologic intervention and/or correction of appropriate secondary cause.