

An Approach to Bone Health Optimization in Patients Undergoing Total Joint Arthroplasty

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INTRODUCTION: Osteoporosis is a critical, yet often overlooked, consideration for patients undergoing total joint arthroplasty (TJA). Osteoporosis can significantly increase the risk of subsequent revision surgery and morbidity, yet is under-diagnosed and under-treated. Primary care screening rates are approximately 25.8% of eligible patients, with treatment being initiated in only 25% of positive tests. Seventy-seven percent of orthopedic surgeons report osteoporosis will change implant choice, but only 4% screen for this regularly. Beginning January 2024, we began a bone optimization process including serum Vitamin D and dual-energy X-ray absorptiometry (DEXA) screening and treatment in at-risk patients being evaluated for TJA.

METHODS: Serum 25-OH Vitamin D is measured as part of routine pre-operative labs and supplemented if deficient. All patients aged 65+ or 50-64 with risk factors undergo pre-operative DEXA screening if not done within the preceding 2 years. Treatment is considered for those whose scans showed osteoporosis (T score < -2.5) or osteopenia (T score -1.0 to -2.5) with an elevated FRAX score (10-year risk of major osteoporotic fracture $\geq 20\%$ or hip fracture $\geq 3\%$).

RESULTS: Since inception, we have ordered 739 DEXA scans. Of the DEXA scans ordered, 644 have been completed and 171 patients (26.6%) required initiating treatment. Of those, 47 patients were started on alendronate by our clinic. Eighty-two patients with contraindications to bisphosphonates were referred to specialty care. Forty-two patients deferred treatment to their PCP.

DISCUSSION AND CONCLUSION: Osteoporosis is a modifiable pre-operative risk factor. DEXA screening is significantly underutilized, but incorporating screening into the standard evaluation for TJA patients allows for improved rates of diagnosis and treatment in a population known to be at risk for adverse outcomes. This proactive approach aligns with broader healthcare goals of preventive medicine and patient-centered care.