Which postmenopausal women do I order a DEXA scan for? Overuse of DXA in women

Natalie Taylor, MD
December 2018

Story From the Front Lines

A woman in her 50s presented to clinic for a routine visit. She has a past medical history of depression, tobacco use and vitamin D deficiency. She asks if she should have a DEXA scan to screen for osteoporosis.

Teachable Moment

Osteoporosis is defined as a skeletal disorder characterized by compromised bone strength predisposing to an increased risk of fracture. The goal of screening for osteoporosis is to find the patients at increased risk of sustaining a low-trauma fracture. Bone strength is related to many factors, such as bone mineral density (BMD) and other properties of bone, often collectively called "bone quality." However, clinically in medicine we use bone mineral density (BMD) to measure bone strength.

Most organization's guidelines agree that we should screen the average risk postmenopausal woman with DEXA scanning beginning at age 65. However, a large screening trial[1] in Denmark looked at medication use and fractures, in women (aged 65 to 80 years) assigned to osteoporosis screening or usual care. They found that after 5 years there was an increase in osteoporosis medication use in the screening group (23 versus 18 percent) but no significant difference in fractures between screening and control groups.

Our patient was under 65 years old, but has two risk factors, tobacco use and vitamin D deficiency. Guidelines suggest that younger women be screened in the presence of specific risk factors for osteoporosis, particularly if a calculated FRAX score indicates that their risk of fracture is similar to that of an average risk 65 year old woman. However, a trial[2] of 4800 postmenopausal women (aged 45 to 54 years) were randomly assigned to osteoporosis screening or no screening. After a mean of nine years, there was a nonsignificant reduction in the incidence of fracture in the screened group (8.8 versus 9.4 percent). In addition, a greater proportion of screened women reported current or past use of hormone therapy (52 versus 45 percent) or other osteoporosis medications (37 versus 22 percent). Therefore, in younger women, screening may not lead to decreased fracture incidence as we have found for older women since younger women are less likely to experience fractures overall. And screening younger women may also lead to an increase in unnecessary medication use.

Screening is often done every two years. However, a study[3] suggests that the screening interval should be determined by baseline bone mineral density rather than an arbitrary interval. On their initial scan, women age 65 – 68 with mild osteopenia (T-score no worse than -1.5) took up to 15 years to transition to osteoporosis. While women with advanced osteopenia (T-score -2.0 to -2.49) were found to transition to osteoporosis in 1 year. They also found the older the woman,

the faster the transition to osteoporosis. Thus, screening every two years may be overuse in some younger patients and in patients with high baseline bone mineral density scores.

We stress lifestyle modifications for everyone, including adequate calcium and vitamin D intake, exercise, smoking cessation, and decreasing alcohol use. However, pharmacotherapy for osteoporosis is not benign. Oral bisphosphonates can cause reflux, esophagitis, and ulcers. When deciding to order that DEXA screen or not, we should stop to think about whether this patient really needs osteoporosis screening or if screening them will just lead to medication overuse?

References:

1. Rubin, KH, et al. (2018). Effectiveness of a two-step population-based osteoporosis screening program using FRAX: the randomized Risk-stratified Osteoporosis Strategy Evaluation (ROSE) study. Osteoporos Int. 29(3):567.

2. Barr, RJ, et al. (2010). Population screening for osteoporosis risk: a randomised control trial of medication use and fracture risk. Osteoporos Int. 21(4):561.

3. Gourlay, ML, et al. (2012 Jan 19). Study of Osteoporotic Fractures Research Group: Bone-density testing interval and transition to osteoporosis in older women. N Engl J Med. 366(3):225-33. doi: 10.1056/NEJMoa1107142.