Low Rate of Bone Density Testing in Men Receiving Androgen Deprivation Therapy

A recent article shows that most men receiving androgen deprivation therapy (ADT) for prostate cancer do not undergo bone mineral density (BMD) testing (Cancer [published online ahead of print October 12, 2012]. doi: 10.1002/cncr.27830). “For men on long-term ADT, it is extremely important to think about the potential consequences and make sure patients, and their primary care physicians, are aware of them,” says corresponding author Nancy Keating, MD, MPH, associate professor of medicine and health care policy at Harvard Medical School in Boston, Massachusetts. She adds that clinicians simply do not think about osteoporosis in men as much as they do in women.

It is well documented that ADT causes a loss of bone density and increases the risk of fractures. In 2008, guidelines from the National Comprehensive Cancer Network and the American College of Physicians were published recommending BMD testing for men undergoing ADT. There are an estimated 600,000 men receiving ADT at any one time, making it a common clinical issue. Researchers set out to determine the rate of, and factors associated with, BMD testing in these men. “This study uses the… [National Cancer Institute’s Surveillance, Epidemiology, and End Results] SEER data, is well executed, and written by respected authors, making the results reliable,” says Allan Lipton, MD, professor of medicine and oncology at the Milton S. Hershey Medical Center at Pennsylvania State University in Hershey, Pennsylvania.

Several Factors Influence BMD Testing

Keating and her colleagues identified all men with localized or regional prostate cancer diagnosed from 2001 to 2007 who were aged 66 years and older and enrolled in Medicare Parts A and B using the SEER-Medicare-linked database. Men with metastatic disease were not included. BMD testing was assessed from 6 months before the first dose of ADT through 1 year after starting ADT. The researchers evaluated potential associations between BMD testing and clinical and demographic factors including age, comorbid illness at the time of starting ADT, year of initiation of ADT, tumor Gleason score, primary treatment type, median income, percentage of high school graduates in the census tract of residence, and hospitalizations in the year after ADT was started. In addition, the type of physicians seen by the patients was assessed (medical oncologist, urologist, or primary care provider).

Of the 28,960 men with locoregional prostate cancer who were identified as having received ADT continuously for at least 1 year, only 10.2% underwent BMD testing during the 6 months before treatment started, and up to 1 year afterward. Rates of BMD testing increased from 6% for those who began treatment during 2001 to 2002 to 14.5% for those who started treatment between 2007 and 2008. Men aged 85 years and older were significantly less likely than men aged 66 years to 69 years to have BMD testing (odds ratio [OR], 0.76; 95% confidence interval [95% CI], 0.65-0.89), and black men were significantly less likely than white men to undergo BMD testing (OR, 0.72; 95% CI, 0.61-0.86). Men living in areas with higher education levels had higher rates of BMD testing compared with men residing in areas with the lowest education levels. BMD testing was more frequent among men with 2 or more comorbid diseases versus those with none. Unmarried men were significantly less likely than married men to undergo BMD testing (OR, 0.82; 95% CI, 0.72-0.93).

Furthermore, the type of physician seen affected BMD testing rates; the men who had a primary care physician and/or medical oncologist involved in their care were significantly more likely to be tested than those who only saw a urologist. The testing rate was 6.5% for those men who only saw a urologist, 9.4% if both a urologist and primary care physician were seen, 14.6% if a urologist and medical oncologist were seen, and 18.4% if all 3 were seen. When men who received continuous ADT for at least 2 years were analyzed, the overall rate of BMD testing was 17.7%. Associations between BMD testing and clinical and demographic factors for men undergoing ADT for 2 or more years were similar to associations observed among men treated for 1 year.

Widespread screening for bone mineral density loss is recommended for men receiving androgen deprivation therapy to minimize their risk of fractures and osteoporosis.
“Many men who would benefit from bone density testing were not getting it,” says Dr. Keating. “Rates of testing were particularly low for older men, black men, and those living in areas with low educational attainment, suggesting that nonclinical factors may be influencing decisions. Efforts are needed to improve use of bone density testing for men receiving long-term ADT.”

**Study Limitations**

The authors acknowledged several study limitations. The study period started before guidelines were in place and before evidence about ADT-related bone loss was prevalent in the literature. Nevertheless, the rate of testing after the guidelines were published remained low. “The data on agents to prevent skeletal-related events from treatment-related bone loss such as bisphosphonates and denosumab was emerging around 2007-2008, so it would be interesting to see more current data,” adds Dr. Lipton.

In addition, physician recommendations for testing were not assessed, only actual testing. Furthermore, only those men aged 65 years and older who were living in SEER areas and enrolled in Medicare were included. Bisphosphonate use and radiation oncology visits were also not included.

Despite these limitations, BMD testing was low in patients receiving ADT, and guidelines recommend that all men be tested. Therefore, efforts to increase screening for treatment-related BMD loss are needed, especially in important groups such as older men and black men, who were identified as receiving less testing than their younger and white, respectively, counterparts.

“Increasing awareness is vital, not only among urologists and medical oncologists, but also among [primary care physicians] PCPs. In general, physicians often fail to think about osteoporosis in men, even when taking medications like steroids, which have been long known to cause osteoporosis,” says Dr. Keating. “The evidence about the adverse effects of ADT on bones is more recent than that, so we need to continue to be sure that the message gets out there.”

Dr. Lipton agrees that everyone needs to be better informed, as the increase in BMD testing over the study period was not impressive given that guidelines were published and data were available showing the adverse effects on bones from ADT and effective therapy for bone loss.