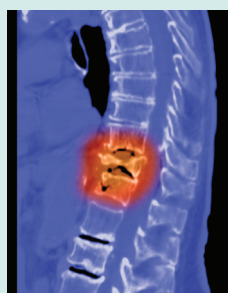


■ CNE Article

Nutrition Education for Osteoporosis Prevention in Men With Prostate Cancer Initiating Androgen Deprivation Therapy

Heather Millar, RD, MSc, and Joyce Davison, RN, PhD



Osteoporosis is a common side effect of treatment with androgen deprivation therapy (ADT) in men with prostate cancer. ADT may prolong survival; however, deterioration of bone mass density occurs soon after initiation. A systematic review of current literature revealed the importance of adequate nutrition during treatment with ADT to reduce the risk of osteoporosis. More specifically, this literature stressed achieving adequate intake of calcium and vitamin D through a combination of supplements and food. The necessity of providing nutrition education to patients with prostate cancer at initiation of ADT was identified. Healthcare professionals, including nurses, oncologists, and dietitians, can be instrumental in identifying patients with prostate cancer initiating ADT who are at risk for osteoporosis. Research on nutrition and lifestyle modification interventions to maintain bone health and reduce fracture risk for patients initiating ADT is limited. Additional research is required to develop and evaluate nutrition education interventions that will reduce the risk and prevent osteoporosis in men on ADT.

Heather Millar, RD, MSc, is a clinical oncology dietitian at Royal University Hospital in the Saskatoon Health Region and Joyce Davison, RN, PhD, is an associate professor in the College of Nursing at the University of Saskatchewan, both located in Saskatoon, Saskatchewan, Canada. The authors take full responsibility for the content of the article. The authors did not receive honoraria for this work. The content of this article has been reviewed by independent peer reviewers to ensure that it is balanced, objective, and free from commercial bias. No financial relationships relevant to the content of this article have been disclosed by the authors, planners, independent peer reviewers, or editorial staff. Millar can be reached at haw205@mail.usask.ca, with copy to editor at CJONEditor@ons.org. (First submission July 2011. Revision submitted November 2011. Accepted for publication February 20, 2012.)

Digital Object Identifier: 10.1188/12.CJON.497-503

Androgen deprivation therapy (ADT) frequently is used as an adjuvant treatment following radiation therapy or radical prostatectomy for men with nonmetastatic prostate cancer (Sharifi, Gulley, & Dahut, 2010). Compared to initiating ADT treatment later on, immediate introduction of ADT increases survival time for those men; however, starting ADT earlier also means that the treatment modality is used for longer periods of time (Sharifi et al., 2010). That increases the risk of side effects from ADT, including loss in bone mineral density (BMD), bone fracture, and ADT-related osteoporosis (Sharifi et al., 2010). Several prospective studies have shown that bone mass density is decreased by 0.6%–4.6% yearly in patients with nonmetastatic prostate cancer receiving ADT compared to the rate of age-related bone loss of 0.5%–1% yearly in healthy men (Israeli, Ryan, & Jung, 2008). Research on the effects of ADT on BMD indicates a 2%–10% decrease in BMD in the first year following initiation of ADT (Michaelson et al., 2008). ADT disrupts the

normal hormonal balance required for bone health by increasing bone resorption but not bone formation (Eastham, 2007). The most dramatic deterioration in BMD with men on ADT has been shown in the femoral neck of the hip (Davison, Oliffe, Pickles, & Mroz, 2009), and hip fractures have been identified as a risk of increased mortality during the first year after fracture (Kiebzak et al., 2002). Men 60 years of age or older have 10 times the risk of death the year after hip fracture compared to the general population (Johnell et al., 2004). The literature also indicates men 80 years of age or older are less likely to receive and/or adhere to treatment to prevent additional bone resorption following a hip fracture that comes with a 30% increased chance of mortality in the year following the initial fracture (Kiebzak et al., 2002).

Different therapies have been used to prevent and treat osteoporosis in men on ADT. Bisphosphonates seem to be one of the most popular treatments for this purpose. However, very few men are being prescribed bisphosphonates at initiation of