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

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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