

The Role of the Advanced Practice Provider in Bone Health Management for the Prostate Cancer Population

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Androgen deprivation therapy (ADT) is standard, first-line therapy for many aspects of prostate cancer treatment. Although ADT can be an effective treatment to inhibit androgen-fueled cell growth in prostate cancer, suppression has significant side effects, including the development or exacerbation of underlying osteoporosis. Patients may be unaware of the adverse effects on bone health and muscle strength commonly associated with ADT. Practice standards require consistent screening of all patients with prostate cancer before ADT initiation to facilitate optimal baseline and subsequent osteoporosis management.

AT A GLANCE

- ADT for the treatment of prostate cancer can significantly increase the risk of osteoporosis and skeletal fractures.
- Care of the patient receiving ADT includes prevention, screening, detection, and management of osteoporosis.
- Advanced practice providers can conduct fall risk and fracture assessments, monitor patients' bone density scans, educate patients about lifestyle modifications, and initiate vitamin D and calcium supplementation.

KEYWORDS

prostate cancer; androgen deprivation therapy; osteoporosis; bone health

DIGITAL OBJECT IDENTIFIER

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Prostate cancer is the most common noncutaneous cancer in men, with a lifetime risk of diagnosis of one in eight men. Prostate cancer is also a disease of aging, with an average age at diagnosis of 67 years (American Cancer Society, 2024). In 2024, 299,010 men are estimated to be diagnosed with prostate cancer, with 35,250 expected to die of the disease, making prostate cancer the second leading cause of cancer death in American men, second only to lung cancer (American Cancer Society, 2024).

Treatment recommendations and planning for prostate cancer are dependent on cancer stage and grade. At diagnosis, clinicians prescribe a plan for management, with treatment modifications occurring over time based on disease parameters. For example, although Gleason score 6 (3 + 3) cancer is commonly treated using either a surveillance approach or a straightforward surgery or radiation therapy plan with subsequent monitoring, a more complex disease presentation of high-volume or higher-grade cancer may require a multifactorial approach. This may include—in addition to surgery or radiation therapy—the use of androgen deprivation as an adjuvant therapy for high-volume or high-grade disease at high risk for recurrence, for disease with locally advanced features, and in metastatic disease. Therefore, androgen deprivation therapy (ADT), in addition to ADT initiation for metastatic disease, is the appropriate therapy for disease with locally advanced features, for high-volume or high-grade disease at high risk for recurrence, as a defined course of adjuvant treatment with surgery or radiation therapy in intermediate- or high-risk disease, and as a treatment approach with biochemical relapse after surgery (Chahin et al., 2016, Jang et al., 2018).

Androgens preserve bone health in men. Healthy, aging men can experience a gradual, not universal, loss of bone health, which is generally associated with older age and a decline in testosterone levels (Mohamed et al., 2017). Because a health change—such as the onset of menopause in women to initiate screening for osteoporosis—does not exist for men to trigger screening, a routinely employed screening tool for older men is not standard practice.

Risk Assessment

Although it is a mainstay of prostate cancer treatment in a variety of presentations, ADT has significant side effect risks. Because androgens preserve bone