

# Management of Androgen Deprivation Therapy–Associated Hot Flashes in Men With Prostate Cancer

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**PROBLEM IDENTIFICATION:** To determine best practices for managing hot flashes associated with androgen deprivation therapy (ADT) in men with prostate cancer.

**LITERATURE SEARCH:** The CINAHL®, Embase®, PsycINFO®, PubMed®, and Scopus® databases were used to identify randomized controlled trials (RCTs) and quasiexperimental studies published between January 1994 and June 2018.

**DATA EVALUATION:** Using the *Cochrane Handbook for Systematic Reviews of Interventions*, the authors reviewed 15 studies examining the effects of pharmacologic or complementary and alternative medicine interventions on ADT-associated hot flashes in men with prostate cancer.

**SYNTHESIS:** Pharmacologic interventions (e.g., cyproterone, medroxyprogesterone, megestrol acetate) showed some promise for reducing hot flashes but were associated with side effects and risks. Acupuncture demonstrated potential benefit in reducing hot flashes without side effects.

**IMPLICATIONS FOR RESEARCH:** Evidence is insufficient to support interventions for ADT-associated hot flashes in men with prostate cancer. Future RCTs should be sufficiently powered, include a control group, and use standardized outcome measures.

**KEYWORDS** androgen deprivation therapy; complementary and alternative medicine; hot flashes

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More than 3 million men are living with or have survived prostate cancer. With an estimated 165,000 new individuals diagnosed with prostate cancer in 2018, 98.2% are expected to live for at least five years after diagnosis (National Cancer Institute, n.d.). Androgen deprivation therapy (ADT) is the first line of treatment for advanced-stage prostate cancer and can be administered before, during, or after radiation therapy (Nevedomskaya, Baumgart, & Haendler, 2018). ADT-associated side effects are well documented and include loss of libido, sexual dysfunction, fatigue, enlarged breasts, anemia, osteoporosis, mood symptoms, and hot flashes (Siddiqui & Krauss, 2018). The side effects of ADT may be debilitating and cause patients to stop ADT treatment (Crawford et al., 2019).

A hot flash is the intense sensation of heat accompanied by diaphoresis and flushing. These recurrent episodes can be transient or last as long as 20 minutes (Jones, Kohli, & Loprinzi, 2012). Hot flashes affect almost 80% of men with prostate cancer who undergo ADT (Vitolins et al., 2013), with nearly half of these patients continuing to experience them for five years following treatment. Most men reported that hot flashes still continued after cessation of treatment with the same frequency and duration as when treatment was initiated (Baum & Torti, 2007). The experience of hot flashes may lead to a decrease in quality of life (QOL) among men with prostate cancer and can result in early discontinuation of treatment (Ahmadi & Daneshmand, 2014). However, lack of evidence exists for best practices in managing ADT-associated hot flashes (Jones et al., 2012). In this integrative review, the effects of existing pharmacologic and complementary and alternative medicine (CAM) interventions on ADT-associated