

Comparing Interventions for Management of Hot Flashes in Patients With Breast and Prostate Cancer: A Systematic Review With Meta-Analyses

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PROBLEM IDENTIFICATION: Hot flashes are common and bothersome in patients with breast and prostate cancer and can adversely affect patients' quality of life.

LITERATURE SEARCH: Databases were searched for randomized controlled trials (RCTs) evaluating the effects of one or more interventions for hot flashes in patients with a history of breast or prostate cancer.

DATA EVALUATION: Outcomes of interest included changes in hot flash severity, hot flash frequency, quality of life, and harms. Pairwise meta-analyses and network meta-analyses were performed where feasible, with narrative synthesis used where required.

SYNTHESIS: 40 RCTs were included. Findings from network meta-analysis for hot flash frequency suggested that several therapies may offer benefits compared to no treatment, but little data suggested differences between active therapies. Findings from network meta-analysis for hot flash score were similar.

IMPLICATIONS FOR RESEARCH: Although many interventions may offer improvements for hot flashes versus no treatment, minimal data suggest important differences between therapies.

KEYWORDS systematic review; meta-analysis; breast cancer; prostate cancer; hot flashes

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Improvements in diagnosis and treatment of breast and prostate cancer are leading to a growing number of cancer survivors (American Cancer Society, 2019). A consequence of this is that many more patients are faced with managing the long-term side effects of their treatment. Treatments for breast or prostate cancer that target production of estrogen and testosterone can be associated with hormone-deprivation symptoms, the most common of which is hot flashes. The frequency, severity, and duration of hot flashes can vary widely from patient to patient but are reported in more than 65% of breast cancer survivors (Chang et al., 2016; Kontos et al., 2010; Mann et al., 2012) and in 80% of men undergoing androgen deprivation therapy (ADT) for prostate cancer (Frisk, 2010). Hot flashes not only can significantly affect a patient's quality of life (Goldman, 2017), but also can be significant enough to lead to discontinuation of cancer treatment (Buijs et al., 2009). Despite their frequency and significance, there is currently a lack of consensus on evidence-based interventions to treat hot flashes (Goldman, 2017).

A hot flash has been defined as "a subjective sensation of heat that is associated with objective signs of cutaneous vasodilation and a subsequent drop in core temperature" (Boekhout et al., 2006, p. 642). The concept of hot flashes in men has not been well explored in the literature. A concept analysis identified the key attributes of hot flashes in men to consist of physiologic (e.g., warmth, sweating, chills) and psychological factors (e.g., anxiety, impaired memory) (Engstrom, 2005). Hot flashes are also often referred to as hot flushes, night sweats, and vasomotor symptoms. The