

New studies point to strategies for reducing painful breast cancer drug side effects

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Aromatase inhibitors, the same drugs that have buoyed long-term survival rates among breast cancer patients, also carry side effects including joint pain so severe that many patients discontinue these lifesaving medicines. New University of Pennsylvania School of Medicine research, however, has uncovered patterns that may help clinicians identify and help women at risk of these symptoms sooner in order to increase their chances of sticking with their treatment regimen.

In a study published recently in the journal *Cancer*, researchers at Penn's Abramson Cancer Center found that estrogen withdrawal may play a role in the onset of joint pain, also known as arthralgia, during treatment: Women who stopped getting their menstrual periods less than five years before starting breast cancer treatment were three times more likely to experience these pains than those who reached menopause more than a decade earlier. In a separate study published in the journal *Integrative Cancer Therapies*, the Penn researchers found that among women experiencing these symptoms during treatment with aromatase inhibitors (AI), those who received electro-acupuncture - a technique that combines traditional acupuncture with electric stimulation - reported a reduction in joint pain severity and stiffness. Those women also said they suffered less fatigue and anxiety.

"We are fortunate today to have many effective treatments for breast cancer. Unfortunately, many of these treatments have troublesome and debilitating side effects that can last for months or years after treatment, and really harm the quality of life and productivity of women who

receive them," says lead author Jun J. Mao, MD, MSCE, an assistant Professor of Family Medicine and Community Health. "These findings are just a first step in our comprehensive research program aimed at understanding the nature of treatment-related symptoms, who is likely to get them, the mechanisms by which they occur, and how best to treat them."

Toxicity issues and side effects among patients taking aromatase inhibitors - drugs used in post-menopausal women to prevent recurrence of breast cancer following initial treatment, by reducing the amount of estrogen the body makes - lead as many as 20 percent of patients to miss prescription refills or discontinue their therapy altogether. Patients in the new study were taking aromatase inhibitors including Arimidex, Femara or Aromasin. Of the 300 patients enrolled in the study, 139 reported AI-related pain, with 75 percent of those reporting symptoms that began within the first three months of the therapy. Women most commonly had pain in their wrists, hands, and knees, though more than half said they also had pain in their backs and ankles or feet. Women who had their last menstrual period within the five years prior to beginning AIs appeared to be three times more likely to have these symptoms than women whose periods had stopped 10 or more years earlier. The authors say this finding indicates that women who entered menopause more recently may have higher levels of residual circulating estrogen in their bodies, which combined with exposure to AIs may cause a steeper, quicker drop in estrogen levels, leading to worse symptoms.

Mao and senior author Angela DeMichele, MD, MSCE, an associate professor of Medicine and Epidemiology and Biostatistics, are running a comprehensive Wellness after Breast Cancer study to examine how clinical and genetic factors relate to treatment-related symptoms such as joint pain, hot flashes, insomnia, and fatigue both during and after cancer treatment. Ultimately, they hope to identify patients at greatest risk of these symptoms and late effects of treatments, and personalize

therapy in a way that will prevent the side effects of cancer therapy while maximizing the likelihood of cure.

"As modern science brings cures to many women affected by breast cancer, how to help these women to live well after cancer is vitally important," DeMichele says. "With a multidisciplinary team of clinicians and researchers from oncology, primary care, reproductive endocrinology, and behavioral health, we will better understand the challenges faced by [breast cancer](#) survivors and develop new treatments that promote the health and wellbeing of our patients as they strive to overcome this illness."

Source: University of Pennsylvania School of Medicine ([news](#) : [web](#))

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