

# KNOW

Knowledge in Naturopathic Oncology Website

## **Up-to-Date Research on Aromatase Inhibitors: Powered by KNOW**

This free Continuing Education activity is brought to you by OncANP and the KNOW project and is approved by OBNM for 2 hours of Pharmacy CE.

To take your test, click here and select "Up-to-Date Research on Aromatase Inhibitors: Powered by KNOW". If you have not used test.com before, you will need to create a login with your email to receive your CE certificate at the end.

<https://www.mytestcom.net/app/myTestcomURL.cfm?accountLogin=OncANP123>

### **Aromatase Inhibitors: Anastrozole/Arimidex & Exemestane/Aromasin**

Aromatase Inhibitors are estrogen blockers that works by inhibiting aromatase enzymes. Aromatase enzymes are found in the body's muscle, skin, breast and fat and are used to convert androgens (hormones produced by the adrenal glands) into estrogens. Arimidex & Aromasin are approved as first-line treatment of postmenopausal women with hormone receptor-positive locally advanced or metastatic breast cancer. It is second line in advanced breast cancer in postmenopausal women with disease progression following tamoxifen therapy. It is taken orally either with or without food on a daily basis.

**Common side effects** (occurring in greater than 30%) include; Hot Flashes, Muscle/Joint pain and Stomach upset. Less common side effects (occurring in about 10-29%) include; fatigue, mood disturbance, depression, osteoporosis, back pain, carpal tunnel, insomnia, hypertension, sore throat, nausea, vomiting, rash, dyspnea, lymphedema, peripheral edema.<sup>iii</sup> Women who have a history of blockage in their heart arteries who take Anastrozole/Arimidex may have an increase in symptoms of decreased blood flow to their heart compared to similar women who take tamoxifen. In women with pre-existing ischemic heart disease, the incidence of ischemic cardiovascular events was 17% in patients on Anastrozole/Arimidex and 10% in patients on tamoxifen.<sup>iii</sup> Joint pain that occurs in the first 6 weeks while on Aromatase Inhibitors typically worsens over time vs resolving.<sup>iv</sup> In one study, 32% of women with early breast cancer discontinued Aromatase Inhibitors within 2 years due to side effects, 24% of these due to joint pain specifically.<sup>v</sup>

**Herbal Interactions** with Anastrozole/Arimidex: In a double blind RCT, addition of ground flaxseeds to anastrozole did not impact excretion of anastrozole.<sup>vi</sup> Women treated with tamoxifen, anastrozole or letrozole safely took ginkgo biloba 120mg twice daily without impacting plasma levels of their medication.<sup>vii</sup>

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## **Supportive Care Considerations for AI Arthralgia**

**Homeopathics:** In KNOW, you can find a controlled trial, women with breast cancer who were planning to start treatment with an aromatase inhibitor, the patients taking a combination of homeopathic *Ruta graveolens* 5CH and *Rhus toxicodendron* 9CH twice daily for 3 months experienced less joint pain compared to women who did not receive the homeopathic treatment.<sup>viii</sup>

*CE question: After 3 months, 5% of women taking the homeopathic combination had a significantly worse composite pain score, compared to how many women not taking homeopathics?*

*CE Question: After 3 months, 5% of women on the homeopathics increased their pain medication, compared to 45% of women not taking homeopathics.*

**B12:** In KNOW, you can find a phase II study, women with breast cancer who were experiencing joint pain on aromatase inhibitors, daily sublingual vitamin B12 significantly reduced their pain scores.<sup>ix</sup>

*CE Question: What dose of B12 was used in this trial?*

*CE Question: When B12 was given to women with average and severe joint pain levels, how much did their pain improve?*

*CE Question: Homocysteine and methylmalonic acid levels both were reduced after B12 supplementation*

**Glucosamine/Chondroitin:** In KNOW, you can find a phase II study, women with breast cancer who were experiencing joint pain on aromatase inhibitors who took glucosamine-sulfate + chondroitin-sulfate experienced moderate symptom relief.<sup>x</sup>

*CE Question: What dose of glucosamine/chondroitin was used to reduce aromatase inhibitor arthralgia?*

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*CE Question: At 12 weeks, over half of participants had  $\geq 20\%$  decrease in their hip and knee pain, and less hand and wrist pain.*

*CE Question: Joint pain relief from glucosamine + chondroitin lasted until the end of the study at 24 weeks*

**Vitamin D:** In KNOW, you can find a double-blind RCT, adding high dose vitamin D2 supplementation to women taking Anastrozole improved aromatase inhibitor-induced musculoskeletal symptoms and bone loss.<sup>xi</sup>

*CE Question: **High dose** (50,000IU Vitamin D2 weekly for 16 weeks, then monthly for 2 months) was more effective at reducing joint pain than low dose (50,000IU Vitamin D2 weekly for 8 weeks then monthly for 4 months) or placebo.*

*CE Question: Weekly high doses of Vitamin D2 were found to be effective at reducing only joint pain, not muscle pain*

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<sup>i</sup> <https://chemocare.com/chemotherapy/drug-info/anastrozole.aspx>

<sup>ii</sup> [https://www.accessdata.fda.gov/drugsatfda\\_docs/label/2015/020896s037lbl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2015/020896s037lbl.pdf)

<sup>iii</sup> [https://www.rxlist.com/arimidex-drug.htm#side\\_effects\\_interactions](https://www.rxlist.com/arimidex-drug.htm#side_effects_interactions)

<sup>iv</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3687009/>

<sup>v</sup> <https://www.ncbi.nlm.nih.gov/pubmed/22331951>

<sup>vi</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4077601/?tool=pmcentrez&report=abstract>

<sup>vii</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3625417/?tool=pmcentrez&report=abstract>

<sup>viii</sup> <https://www.ncbi.nlm.nih.gov/pubmed/27914569>

<sup>ix</sup> <https://onlinelibrary.wiley.com/doi/abs/10.1111/tbj.12951>

<sup>x</sup> <https://www.ncbi.nlm.nih.gov/pubmed/23111941>

<sup>xi</sup> <https://www.ncbi.nlm.nih.gov/pubmed/21691817>