

Precautions for Patients Taking Tamoxifen or Aromatase Inhibitors

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Tamoxifen and aromatase inhibitors are widely prescribed therapies for the treatment of breast cancer. Tamoxifen is a selective estrogen receptor modulator that treats hormone-sensitive breast cancers. Research has demonstrated that tamoxifen therapy improves survival and reduces the risk of developing recurrent invasive breast cancer by up to 40%.

Aromatase inhibitors are the drug of choice for the treatment of estrogen receptor- or progesterone receptor-positive breast cancer in postmenopausal women. Research on aromatase inhibitors has demonstrated improved survival in postmenopausal women, postmenopausal women with metastasis, and premenopausal women under the age of 35 with ovarian ablation.

The benefits of these agents have been clearly shown through various clinical trials, yet adherence may be challenging for some patients due to issues of drug interactions, proper education, and adverse effects. Education to prevent and treat adverse effects is of the utmost importance to promote adherence and improve the effectiveness of these medications. Advanced practitioners are

in a position to prescribe these therapies, review medication interactions, educate patients, impact patients' quality of life, improve patients' sense of control, and increase patients' partnerships with their oncology providers.

In 2018 and 2020, two articles on precautions for patients taking tamoxifen and precautions for patients taking aromatase inhibitors were published in the *Journal of the Advanced Practitioner in Oncology* (Heery et al., 2018, 2020). Since then, more information on drug interactions has come to light. This article contains updated patient teaching sheets to aid the advanced practitioner in providing education to patients on these medications (Tables 1 and 2). Permission to reprint and distribute these sheets is granted. ●

References

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- Heery, M., Farley, S., Sparkman, R., Healy, J., Eighmy, W., Zahrah, G., & Zelkowitz, R. (2020). Precautions for patients taking aromatase inhibitors. *Journal of the Advanced Practitioner in Oncology*, 11(2), 184–189. <https://doi.org/10.6004/jadpro.2020.11.2.6>

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Table 1. Precautions for Patients Taking Tamoxifen

Tamoxifen has been the most widely prescribed medication for breast cancer for over 25 years. Daily use of tamoxifen has been shown to improve survival and reduce the risk of developing recurrent invasive breast cancer by up to 40%.

Medications to Avoid or Use With Caution

Certain medications should be avoided or taken with caution while taking tamoxifen, as they may provide less protection against breast cancer:

- Antidepressants such as bupropion (Aplenzin, Forfivo XL, Wellbutrin SR/XL, Zyban), duloxetine (Cymbalta, Drizalma Sprinkle, Irenka), fluoxetine (Prozac, Sarafem, Selfemra, Rapiflux), and paroxetine (Brisdelle, Paxil, Pexeva)
- Cardiac medications such as amiodarone (Pacerone), dronedarone (Multaq), quinidine (Quinidex, Quinaglute), sotalol (Betapace, Sorine, Sotalol Hydrochloride AF, Sotylize), and ticlopidine (Ticlid)
- HIV medications such as cobicistat (Tybost), ritonavir (Norvir), tipranavir (Aptivus), elvitegravir, cobicistat, emtricitabine, and tenofovir alafenamide (Genvoya), and elvitegravir, cobicistat, emtricitabine, and tenofovir disoproxil fumarate (Stribild)
- Neuroleptics such as perphenazine (Trilafon), pimozide (Orap), and thioridazine (Mellaril)
- Anti-infective agents such as hydroxychloroquine (Plaquenil), quinidine (Cardioquin), rifampin (Rifadin), and terbinafine (Lamisil)
- Other medications like cinacalcet (Sensipar), conivaptan (Vaprisol), haloperidol (Haldol), and mirabegron (Myrbetriq)

Anticoagulants

- Warfarin (Coumadin, Jantoven) should be closely monitored and discussed with your oncology provider.

Estrogen Products/Estradiol Derivatives

- Discuss all estrogen products with your health-care provider.

Other Medications

- Colchicine (Colcrys, Mitigare, Gloperba), dabigatran (Pradaxa), rifaximin (Xifaxan), and rivaroxaban (Xarelto) should be used with caution because of an increased risk of side effects from the medications.

Alcohol

- Alcohol should be avoided or limited while taking tamoxifen, as alcohol consumption may decrease the efficacy of this medication.

Surgical Considerations

Before surgery, please discuss tamoxifen usage with your surgeon. Tamoxifen may need to be held for several days before and after surgery to prevent the risk of increased bleeding.

- Notify your surgeon if you are taking garlic, ginger, ginkgo, glucosamine, green tea, guarana, and/or high doses of vitamin E and fish oil, as they may impact bleeding.

Supplements

Some herbs, supplements, and other products can impact the effectiveness of your cancer treatment. Talk with your provider or health-care team if you are taking any of these products. The products listed below may cause problems with breast cancer or breast cancer treatment when taken in concentrated doses such as supplement form. These products are not normally harmful if found in the food that you eat as part of your regular diet.

Aletris	Dong quai	Maca
Alfalfa	Echinacea	Noni juice
Anise/Star anise	Fennel	Red clover
Bitter melon	Flaxseed/hops	Red raspberry leaf
Black/Blue Cohosh	Ginseng	Scarlet pimpernel
Chamomile	Guggul	Soy supplements
Chasteberry	High protein supplements	St. John's wort
Diindolylmethane (DIM)	Isoflavones/Plant estrogens	Turmeric/Curcumin
	Kudzu	Valerian

Note. Generic drug names and common brand names listed only. Always tell your provider or health-care team all the medications, herbs, supplements, vitamins, and minerals that you are taking. Reprint permission granted.

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Table 2. Precautions for Patients Taking Aromatase Inhibitors

Aromatase inhibitors are the gold standard for postmenopausal women with breast cancer. Daily use of an aromatase inhibitor has been shown to improve survival and reduce the risk of developing recurrent invasive breast cancer by up to 40%.

Medications to Avoid or Use With Caution While Taking Anastrozole or Letrozole

Certain medications should be avoided or used with caution while taking anastrozole or letrozole.

- Neuroleptics such as aripiprazole (Abilify) and pimozide (Orap)
- Cardiac medications such as dofetilide (Tikosyn)
- Pain medications such as hydrocodone (Vicodin) or methadone (Dolophine, Methadose)

Medications to Avoid or Use With Caution While Taking Exemestane

Certain medications should be avoided or used with caution while taking exemestane.

- Diabetes medications such as saxagliptin (Onglyza)
- Antidepressants such as St. John's wort
- Anticonvulsants such as carbamazepine (Epitol, Equetro, Tegretol), oxcarbazepine (Trileptal), phenobarbital (Solfoton, Luminal), and phenytoin (Dilantin, Phenytek)
- Pain medications such as hydrocodone (Vicodin) and methadone (Dolophine)
- Anti-infective agents such as azithromycin (Zithromax), clarithromycin (Klaricid), efavirenz (Sustiva), nevirapine (Viramune), ritonavir (Norvir), cobicistat (Tybost), elvitegravir, cobicistat, emtricitabine, and tenofovir alafenamide (Genvoya), elvitegravir, cobicistat, emtricitabine, and tenofovir disoproxil fumarate (Stribild), rifampin (Rimactane), rifabutin (Mycobutin), voriconazole (Vfend), ketoconazole (Nizoral), and itraconazole (Sporanox)
- Heart/blood pressure medications such as amiodarone (Pacerone), diltiazem (Adizem), and verapamil (Isoptin)

Other Precautions

- Estrogen products/estradiol derivatives: Discuss all estrogen products with your health-care provider.
- Alcohol should be avoided or limited while taking aromatase inhibitors, as alcohol consumption may decrease the efficacy of this medication.
- Avoid grapefruit juice and particularly the specific class of Seville or "bitter" oranges, as they can interfere with the efficacy of exemestane. Normal store-bought orange juice is ok.

Supplements

Some herbs, supplements, and other products can impact the effectiveness of your cancer treatment. Talk with your provider or health-care team if you are taking any of these products. The products listed below may cause problems with breast cancer or breast cancer treatment when taken in concentrated doses such as supplement form. These products are not normally harmful if they are found in the food that you eat as part of your regular diet.

Aletris	Echinacea	Noni juice
Alfalfa	Fennel	Panax ginseng
Androstenediol	Flaxseed	Red clover
Androstenedione	Ginseng	Red raspberry leaf
Anise/Star anise	Grapefruit juice	Resveratrol
Black/Blue cohosh	Guggul	Saw palmetto
Chasteberry	Hu zhang	Scarlet pimpernel
Chamomile	Isoflavones/Plant estrogens	St. John's wort
Dandelion	Kudzu	Turmeric/Curcumin
Diindolylmethane (DIM)	Maca	Valerian
Dong quai	Milk thistle	(Whey) High protein supplements

Note. Generic drug names and common brand names listed only. Always tell your provider or health-care team all the medications, herbs, supplements, vitamins, minerals that you are taking. Please consult your health-care provider for more information. Reprint permission granted.

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