

New international practice guidelines for tamoxifen treatment based on CYP2D6 genotype

1 February 2018, by Colette Gallagher



Credit: Mayo Clinic

An international group of clinicians and scientists representing the Clinical Pharmacogenetics Implementation Consortium (CPIC) published the first-ever clinical practice guideline for using CYP2D6 genotype to guide tamoxifen therapy in *Clinical Pharmacology and Therapeutics*. Tamoxifen is a hormonal agent used for the prevention and treatment of premenopausal and postmenopausal breast cancer that is estrogen receptor positive. CYP2D6 genotype is an inherited factor that alters the metabolism of tamoxifen.

"The goal of the CPIC Guideline for CYP2D6 and [tamoxifen therapy](#) is to provide clinicians information that will allow the interpretation of clinical CYP2D6 [genotype](#) tests so that the results can be used to guide prescribing of tamoxifen when genotype information is available," says Matthew Goetz, M.D., a Mayo Clinic medical oncologist, who is the lead author. "The consensus of the consortium tamoxifen group was that there was sufficient evidence to use CYP2D6 genotype to assist with clinical recommendations for women

who are being considered for tamoxifen for early stage [estrogen receptor](#) positive [breast cancer](#)."

Tamoxifen is converted through the process of liver metabolism into forms that result in greater anti-estrogenic potency and anti-tumor activity than the parent drug. Antiestrogens are a class of drugs which prevent estrogens from mediating their biological effects in the body.

Patients with certain CYP2D6 genotypes and patients who receive strong CYP2D6 inhibitors exhibit lower endoxifen concentrations and a higher risk of disease recurrence in some studies of tamoxifen for early breast cancer.

In the consensus guidelines, an extensive review and grading of the evidence regarding the role of CYP2D6 and [tamoxifen](#) clinical outcomes was provided, as well as a therapeutic recommendation for dosing or use of an alternative hormonal therapy based on CYP2D6 genotype.

Learn more by reviewing the Clinical Pharmacogenetics Implementation Consortium Guideline for CYP2D6 and Tamoxifen Therapy.

"The work of the consortium is an example of Mayo's commitment to taking a comprehensive, collaborative team science approach to deliver advanced genomic medicine to our patients. We work with other academic medical centers, hospitals, and clinics to bring the latest discoveries to improve the practice of medicine," says Dr. Goetz.

More information: Matthew P. Goetz et al. Clinical Pharmacogenetics Implementation Consortium (CPIC) Guideline for CYP2D6 and Tamoxifen Therapy, *Clinical Pharmacology & Therapeutics* (2018). [DOI: 10.1002/cpt.1007](https://doi.org/10.1002/cpt.1007)

Provided by Mayo Clinic

APA citation: New international practice guidelines for tamoxifen treatment based on CYP2D6 genotype (2018, February 1) retrieved 19 November 2019 from

<https://medicalxpress.com/news/2018-02-international-guidelines-tamoxifen-treatment-based.html>

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