

CYP2D6 Pharmacogenetics Consultation

UF Health Personalized Medicine Program

HPI:

Patient full name (MRN 00000), is enrolled in the research study, Implementing Genomics in Practice (IGNITE): CYP2D6 Genotype-Guided Pain Management in Patients Undergoing Arthroplasty Surgery (IRB 201800445). This patient provided written consent on --/--/---- and was randomized to the genotype-guided group.

Drug allergies:

Add

CYP2D6 interacting drugs (as of --/--/----):

Add

Pharmacogenetic test results (--/--/----):

CYP2D6 Genotype: */*

CYP2D6 Phenotype: **Normal Metabolizer (NM)**; fully functional CYP2D6 enzyme activity

Interpretation:

Tramadol, codeine, and to a lesser extent hydrocodone and oxycodone are converted to more potent metabolites by the CYP2D6 enzyme. Based on the genotype result, this patient is predicted to be a normal metabolizer of CYP2D6 substrates. Therefore, this patient's CYP2D6 phenotype is associated with normal production of more potent forms of these drugs. Based on CYP2D6 enzyme activity, metabolism of tramadol, codeine, hydrocodone, and oxycodone is expected to provide analgesia.

Recommendations:

Tramadol is recommended as the preferred opioid because of its dual opioid and non-opioid mechanisms of action.

For questions regarding this recommendation, please contact the UF Health Personalized Medicine Program:

Author: **Add**, PharmD

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References:

1. Crews K.R., et al. CPIC guidelines for *CYP2D6* genotype and codeine therapy: 2014 update. Clin Pharmacol Ther. 2014;95:376-82.
2. Stamer, U.M., et al. Impact of *CYP2D6* genotype on postoperative tramadol analgesia. Pain 2003;105:231-8.
3. Wick, E.C., et al. Postoperative multimodal analgesia pain management with nonopioid analgesics and techniques. JAMA Surg 2017;152:691-7.