Amitriptyline (Elavil®)

Information about the drug and genetic variation

What is amitriptyline?

- Amitriptyline is a medication used to treat depression, nerve pain, and migraines.
- Amitriptyline is a tricyclic antidepressant that blocks the brain from reabsorbing two neurotransmitters, serotonin and norepinephrine. Neurotransmitters are chemicals in the brain that help relay information to nerves and rest of the body.

Genetic Variation

- There are two major genes that interact with amitriptyline, known as CYP2D6 and CYP2C19.
- Both CYP2D6 and CYP2C19 are responsible for the breakdown of amitriptyline in the body.
- Depending on the variation of these genes from person to person, your response to amitriptyline may be affected.

Drug-Gene Interaction

- Increased function of the CYP2D6 gene can cause faster breakdown of the medication, thus there is a decreased or sometimes absent effect. Decreased function, however, can cause slower breakdown, leading to increased levels of the medication in the body and a higher risk for side effects.
- The variations of the CYP2C19 gene gives results much like the CYP2D6 gene as they work together to breakdown amitriptyline. An increased function of the CYP2C19 gene causes faster breakdown and less of an effect of the medication. Decreased function causes slower breakdown and more risks.
- Sometimes, the variations of the two genes can work together and create an increased risk of side effects.

If you have any other questions, please visit the links below or consult a healthcare professional.

- www.drugsandgenes.com
- www.pharmgkb.org