

Venlafaxine

Class: Antidepressant, Serotonin/Norepinephrine Reuptake Inhibitor (SNRI)

Pharmacokinetics

Absorption

- i.) Non-genetic
 - a. Concomitant medication: p-glycoprotein inhibitors
- ii.) Genetic
 - a. Genetic variation in p-glycoprotein gene

Distribution

- i.) Non-genetic
 - a. Concomitant medications/substances: p-glycoprotein inhibitors or activators
- ii.) Genetic
 - a. Genetic variation in p-glycoprotein gene

Metabolism

- i.) Non-genetic
 - a. Concomitant medication/substances (CYP2D6, CYP3A4 inducers or inhibitors)
 - b. Cirrhosis: prolonged elimination half-life, decreased clearance
- ii.) Genetic
 - a. Genetic variation in drug metabolizing enzyme gene(s): CYP2D6, CYP3A4

Excretion

- i.) Non-genetic
 - a. Renal impairment: prolonged elimination half-life, reduced clearance (25% dosage reduction recommended)
 - b. Hemodialysis: prolonged elimination half-life, reduced clearance (50% dosage reduction recommended; dose after dialysis)
- ii.) Genetic
 - a. No clear genetic factors affecting excretion

Pharmacodynamics

Receptors

- i.) Non-genetic
 - a. Concomitant medication: adrenergic or serotonin receptor agonists or antagonists (may block or enhance effects of venlafaxine)
- ii.) Genetic
 - a. Genetic variation in serotonin receptor gene(s)

Transporters

- i.) Non-genetic
 - a. Concomitant medication
 - i. Serotonin transporter or norepinephrine transporter inhibitors (additive effects)
 - ii. P-glycoprotein inhibitors or activators
- ii.) Genetic
 - a. Genetic variation in serotonin transporter gene
 - b. Genetic variation in norepinephrine transporter gene
 - c. Genetic variation in p-glycoprotein gene