

Citalopram

Class: Antidepressant, Selective Serotonin Reuptake Inhibitor (SSRI)

Pharmacokinetics

Absorption

- i.) Non-genetic
 - a. No clear non-genetic factors affecting absorption (tablet and oral solution are bioequivalent)
 - b. Concomitant medications/substances: p-glycoprotein inhibitors
- ii.) Genetic
 - a. Genetic variation in p-glycoprotein gene

Distribution

- i.) Non-genetic
 - a. Altered serum protein (80% protein bound)
 - b. Concomitant medications/substances: p-glycoprotein inhibitors or activators
- ii.) Genetic
 - a. Genetic variation in p-glycoprotein gene

Metabolism

- i.) Non-genetic
 - a. Concomitant medications/substances: CYP2C19, CYP3A4 inducers or inhibitors
- ii.) Genetic
 - a. Genetic variation in drug metabolizing enzyme gene(s): CYP2C19, CYP3A4

Excretion

- i.) Non-genetic
 - a. Age: clearance decreased, AUC and half-life increased in elderly
 - b. Hepatic impairment: clearance decreased, AUC and half-life increased
 - c. Renal impairment: clearance reduced and half-life prolonged
- ii.) Genetic
 - a. No clear genetic factors affecting excretion

Pharmacodynamics

Receptors

- i.) Non-genetic
 - a. Concomitant medications: serotonin receptor agonists or antagonists (may block or enhance effects of citalopram)
- ii.) Genetic
 - a. Genetic variation in G-protein beta-3 subunit gene
 - b. Genetic variation in Gs protein alpha-subunit gene

Transporters

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