Fluvoxamine

Class: Antidepressant, Selective Serotonin Reuptake Inhibitor (SSRI)

Pharmacokinetics

Absorption

- i.) Non-genetic
  - a. No clear non-genetic factors affecting absorption
- ii.) Genetic
  - a. No clear genetic factors affecting absorption

Distribution

- i.) Non-genetic
  - a. Age
    - i. Children (6-11 years): higher peak plasma concentration, higher area under the curve, lower clearance vs adolescents (12-17 years)
    - ii. Elderly (66-73 years): higher plasma concentrations (vs ages 19-35 years)
  - b. Gender: female children had higher area under the curve, higher mean peak plasma concentration, and more reports of adverse events (vs male children)
  - c. Altered serum protein (80% protein bound, primarily to albumin)
- ii.) Genetic
  - a. No clear genetic factors affecting distribution

Metabolism

- i.) Non-genetic
  - a. Concomitant medications/substances: CYP1A2, CYP2D6 inducers or inhibitors
  - b. Hepatic dysfunction: decreased clearance
  - c. Smoking: increased metabolism
- ii.) Genetic
  - a. Genetic variation in drug metabolizing enzyme gene(s): **CYP1A2**, CYP2D6

Excretion

- i.) Non-genetic
  - a. Age: reduced clearance in elderly
- ii.) Genetic
  - a. No clear genetic factors affecting excretion

Pharmacodynamics

Receptors

- i.) Non-genetic
  - a. Concomitant medications/substances: serotonin receptor agonists or antagonists (may block or enhance effects of fluvoxamine)
- ii.) Genetic
  - a. Genetic variation in 5-HT_{2A} receptor gene
  - b. Genetic variation in serotonin receptor gene(s)
  - c. Genetic variation in G-protein beta-3 subunit gene
  - d. Genetic variation in Gs protein alpha-subunit gene

Transporters

- i.) Non-genetic
  - a. Concomitant medications: serotonin transporter substrates or inhibitors
- ii.) Genetic
  - a. Genetic variation in serotonin transporter gene

©Copyright, Cincinnati Children's Hospital Medical Center, 3333 Burnet Avenue, Cincinnati, OH 45229, 513-636-4200, 800-344-2462