

Risperidone

Class: Antipsychotic Agent, Atypical, Benzisoxazole

### **Pharmacokinetics**

#### Absorption

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

#### Distribution

- i.) Non-genetic
  - a. Altered serum protein (90% protein bound to albumin and alpha-1 acid glycoprotein)
  - b. Hepatic impairment: increased plasma concentrations
  - c. 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: **CYP2D6**, CYP3A4 inducers or inhibitors
- ii.) Genetic
  - a. Genetic variation in drug metabolizing enzyme gene(s): **CYP2D6**, CYP3A4

#### Excretion

- i.) Non-genetic
  - a. Renal impairment: decreased clearance
  - b. Age: decreased clearance in the elderly
- ii.) Genetic
  - a. No clear genetic factors affecting excretion

### **Pharmacodynamics**

#### Receptors

- i.) Non-genetic
  - a. Concomitant medications/substances
    - i. Adrenergic, dopamine, serotonin, histamine receptor agonists or antagonists (may block or enhance effects of risperidone)
    - ii. Dopamine or norepinephrine transporter blockers (increased neurotransmitter binding to receptors; may block or enhance effects of risperidone)
- ii.) Genetic
  - a. Genetic variation in alpha-1 adrenergic receptor gene
  - b. Genetic variation in dopamine receptor gene(s)
  - c. Genetic variation in serotonin receptor gene(s)

#### Transporters

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