Flecainide

Class: Antiarrhythmic Agent, Class I-C

Pharmacokinetics

Absorption

i.) Non-genetic
   a. Dairy products (milk, yogurt, infant formula) may inhibit absorption in infants

ii.) Genetic
   a. No clear genetic factors affecting absorption

Distribution

i.) Non-genetic
   a. Altered serum protein (40-50% protein bound, primarily to alpha-1 acid glycoprotein)

ii.) Genetic
   a. No clear genetic factors affecting distribution

Metabolism

i.) Non-genetic
   a. Concomitant medications/substances: CYP2D6 inducers or inhibitors
   b. Hepatic impairment: decreased metabolism (increased half-life, decreased elimination)

ii.) Genetic
   a. Genetic variation in drug metabolizing enzyme gene: CYP2D6

Excretion

i.) Non-genetic
   a. Renal dysfunction (end-stage renal disease): prolonged elimination half-life
   b. Alkaline urine (pH >7-8): less unchanged drug in urine, decreased elimination
      i. Strict vegetarian diet can alkalinize the urine
      ii. Renal tubular acidosis (alkaline urine)
   c. Age: elimination half-life may vary with age
   d. Congestive heart failure: prolonged elimination half-life

ii.) Genetic
   a. No clear genetic factors affecting excretion

Pharmacodynamics

Receptors

i.) Non-genetic
   a. No clear non-genetic factors affecting receptors

ii.) Genetic
   a. No clear genetic factors affecting receptors

Transporters

i.) Non-genetic
   a. No clear non-genetic factors affecting transporters

ii.) Genetic
   a. Genetic variation in cardiac potassium ion channel gene
   b. Genetic variation in cardiac sodium channel gene