

Dexmedetomidine: pharmacodynamics

What is it - **Alpha₂-Adrenergic Agonist; Sedative**

Pharmacodynamics and Pharmacokinetics

Onset of action: IV Bolus: 5 to 10 minutes

Peak effect: 15 to 30 minutes

Duration (dose dependent): 60 to 120 minutes

Distribution: V_{ss} : ~118 L; rapid

Protein binding: ~94%

Metabolism: Hepatic via N-glucuronidation, N-methylation, and CYP2A6

Half-life elimination: Distribution: ~6 minutes; Terminal: ~up to 3 hours (Venn, 2002); significantly prolonged in patients with severe hepatic impairment (Cunningham, 1999)

Excretion: Urine (95%); feces (4%)

Clearance: Adults: 39 L/hour; hepatic impairment (Child-Pugh Class A, B, or C): mean clearance values were 74%, 64%, and 53% respectively, of those observed in healthy adults; clearance at birth is approximately 30% of adults, reaching adult values between 6-12 months of age