



beta blocker

pharmacokinetic

lipid soluble (propranolol)

- cross blood brain barrier into the CNS
- produce more central effects than the water soluble
- highly metabolized in the liver
- safe in renal impairment

water soluble (atenolol)

- excreted uncharged in urine
- have longer t1/2 & accumulate in renal disease
- should be avoided in renal impairment

pharmacodynamic

CVS

- decrease heart rate, myocardial contractility
- cardiac output & O₂ consumption . decrease renin release by kidneys

Eye

- produce bronchoconstriction & may precipitate in asthmatic attack

Bronch

- reduction in IOP

therapeutic uses

CVS

- essential hypertension
- angina pectoris: reduce cardiac work & myocardial o₂ demand
- acute myocardial infarction to reduce infarction size & to prevent new infarction
- arrhythmias like ectopic beats & tachycardia

glaucoma

- "timolol" eye drops reduce aqueous humour & high IOP

Hyperthyroidism

- reduce manifestation of sympathetic over activity in the disease

CNS

- migraine prophylaxis
- chronic anxiety to control excessive sympathetic manifestation of anxiety

adverse affect

- bradycardia
- bronchospasm & precipitation of asthmatic attack
- cold extremities due to peripheral vasoconstriction
- nightmares with lipid soluble agents

contraindication

- asthma
- heart block
- late pregnancy
- severe heart failure (small doses useful in mild heart failure)

betab-blockers

selective

Atenolol
metoprolol

nonselective

Propranolol
Timolol
Pindolol