

Beta Blockers

Lead as a 10 minute group discussion with active participation from the trainees. Use a white board to add visual learning component.

Objectives

1. Identify the selectivity of beta blockers.
2. Understand adverse effects of beta blockers.
3. Apply the process of discontinuing beta blockers.

Selective Beta 1 blocker	Non-Selective Beta blocker	Alpha blocker, beta 1-2 blocker
*Metoprolol succinate Metoprolol tartarate *Bisoprolol Atenolol Esmolol Nebivolol	Propranolol Nadolol Sotalol Timolol	Labetalol *Carvedilol

*approved in CHF, no difference between them

Mechanism of Action: Blockade of beta receptors: Beta 1 receptors are on the heart and Beta 2 receptors are in lungs

- Older adults experience age-related decline in autonomic function leading to decreased response to beta-antagonists

Contraindicated

- 2nd and 3rd degree heart block
- Asthma/COPD (relative)
- Bradycardia <55 beats per minute
- Hypotension <80 systolic blood pressure
- Diltiazem or Verapamil (relative)

Side Effects

- Bradycardia
- Depression
- Masks Hypoglycemia (except sweating)
- CNS (nightmares, vivid dreams, lipid soluble)
- Fatigue (usually goes away in 2 weeks)
- Sexual dysfunction
- Abnormal lipid panel
- Bronchospasm

Withdrawal Effect

- Rebound surge of sympathetic activity can cause arrhythmia, tachycardia, death
- TAPER TAPER TAPER!!!

Discuss how to complete orthostatics:

- http://www.cdc.gov/steady/pdf/measuring_orthostatic_blood_pressure-a.pdf

Switching between beta blockers:

- www.globalrph.com

References:

1. Williams, J. R. (1989). Update on beta blockers. *AANA J* 57(1): 29-36.
2. Prichard, B. N. and R. J. Walden (1982). The syndrome associated with the withdrawal of beta-adrenergic receptor blocking drugs. *Br J Clin Pharmacol* 13(Suppl 2): 337S-343S.
3. Bowie, M. W. and P. W. Slattum (2007). Pharmacodynamics in older adults: a review. *Am J Geriatr Pharmacother* 5(3): 263-303.