SAGE GRADUATE SCHOOL OF NURSING (2013)

NSG 622: Jeffrey Fudin, Pharm.D., FCCP

Topic: Autonomic Nervous System / Sympathetic Nervous System

Objectives:

Upon completion, the student will be able to;

1. Draw a diagram to explain the general anatomy and physiology of the autonomic nervous system to the extent discussed in class.
2. Describe the difference between a pregangionic and post ganglionic nerves.
3. List important neurotransmitters including norepinephrine, acetylcholine, dopamine, and serotonin.
4. Define and fully understand the following terms; sympathomimetic, parasympathomimetic, sympatholytic, parasympatholytic, adrenergic, anti-cholinergic, cholinesterase, chloinesterase inhibitor, cholinesterase antagonist, cholimimetic.
5. Know the difference between sympathetic and parasympathetic nerves.
6. Understand how drug and/or chemical activity will effect the body in each of the cases listed in #4 above.
7. Describe the differences between alpha receptors and beta receptors (including beta1 and beta2).
8. Understand the differences between nicotinic and mascarinic receptors.
9. Understand COMT and MAO mechanisms for NE metabolism.
10. Define the role of "receptor agonist" and receptor "antagonist".
11. Understand the role of anti-cholinergics (ie, chlorpheniramine) and sympathomimetics (pseudoephedrine) in the treatment of rhinorea.
12. Understand the role of beta agonists in the treatment of bronchospasm (you don't need to know the chemistry).
13. Understand mydriatics (sympathomimetics and anticholinergics).

BOTH OF THE FOLLOWING READINGS ARE INCLUDED IN THIS HANDOUT

Required Reading:
Bill Blessing and Ian Gibbins (2008) Autonomic nervous system. Scholarpedia, 3(7):2787.

Suggested Reading:
Antonini A, Abbruzzese G, Barone P, Bonuccelli U, Lopiano L, Onofrj M, Zappia M, Quattrone A. COMT inhibition with tolcapone in the treatment algorithm of patients with Parkinson's disease (PD): relevance for motor and non-motor features. Neuropsychiatric Disease and Treatment 2008:4(1) 1–9.