

Activity 2 essay

[Health & Medicine, Drugs](#)



Activity 1

For each of the body systems listed describe the consequence of activation of the parasympathetic and sympathetic nervous systems, then describe a clinical symptom or condition that as a paramedic you may observe in someone with a highly activated PARASYMPATHETIC nervous system. (6 marks)

For each drug, identify ONE paramedic indication, then in the subsequent columns list the molecular target, target tissue, type of interaction (i. e. agonist / antagonist / allosteric modulator / inhibitor) and briefly explain how the interaction of the drug with the molecular target accounts for the observed therapeutic effect for the paramedic indication identified in the first column. (24 marks)

Activity 3

In pharmacodynamics, a drug can be thought of as 'selective' when it shows preference for interaction with one molecular target, even though it may be faced with many molecular targets to choose from. Indeed, salbutamol can act as an agonist at all β adrenergic receptors, but at therapeutic doses it 'selects' the β_2 adrenergic receptor subtype in preference to others.

Considering the drugs used in your clinical practice as a paramedic:

- In the first column, list FOUR receptors from different classes, then in the second column, list their endogenous agonist(s). (2 marks)
- In the third column give an example of ONE drug that is a clinically relevant SELECTIVE agonist OR antagonist for each of the receptors. (2 marks)

Activity 4

Antagonists at receptors for neurotransmitters or hormones are often used clinically.

- Use a diagram to explain how β -adrenoceptors antagonists produce clinically useful effects. (2 marks)

- Considering the actions of β -adrenoceptors throughout the body, would it be the most appropriate treat uncomplicated hypertension in 68yo patient with moderate asthma and renal impairment with atenolol, metoprolol or propranolol? Briefly explain the reasons for your decision. (4 marks)

Propranolol would be a bad choice for this specific patient because propranolol is a non-selective beta - blocker. This means that it works on both beta 1 and 2 receptors. Considering this patients renal and asthma impairment we would not want to give a drug that would exacerbate these issues. For the treatment of his hypertension alone with minimal effects on other organ systems we would want a selective beta 1 blocker, because beta 1 is mostly found on the heart, therefore we would prescribe atenolol or metoprolol.

Works Cited

Braunwald E., Fauci, S., Hauser S., Jameson J. Kasper D., Longo D., Loscalzo J. (Eds.). (2008). Harrison's Principles of Internal Medicine (17th edition) New York. McGraw Hill Medical.

Esterl. M (2004). Beta-Blockers. Retrieved from: <http://www.doping-prevention.sp.tum.de/substances-and-methods/beta-blockers/beta-blockers.html>

Harvey, R., Clark, M., Finkel, R., Rey, J., & Whalen, K. (Eds.) (2012)

<https://assignbuster.com/activity-2-essay/>

Pharmacology (5th edition). Philadelphia, Pa: Lipincott Williams & Wilkins

Katzung, B., Masters, S., & Trevor, A. (2011) Basic & Clinical Pharmacology (12th Edition) NYC, NY: McGraw Hill Medical

Costanzo, L. (2013) Physiology (5th Edition) Philadelphia, Pa: Elsevier, Saunders

Kumar, V., Abbas, A., & Aster, J. (2012) Robbins Basic Pathology (9th edition) Philadelphia, Pa: Elsevier, Saunders

Le, T. & Bhushan, V. (2012) First Aid for the USMLE step 1 - 2013. NYC, NY: McGraw Hill Medical