SNS COLLEGE OF ALLIED HEALTH SCIENCES

SNS Kalvi Nagar, Coimbatore - 35

Affiliated to Dr MGR Medical University, Chennai

DEPARTMENT : PHYSICIAN ASSISTANT

COURSE NAME : PHARMACOLOGY

UNIT : BASIC DRUG EFFECT

TOPICS : Receptor Interactions, Central Nervous System Effects, Peripheral Nervous System Effects, Cardiovascular Effects, Metabolic Effects, Anti-inflammatory Effects, Psychotropic Effects, Analgesic Effects

RECEPTOR INTERACTIONS

- Agonist: Drugs that bind to and activate a receptor, mimicking the endogenous ligand's effect. This can lead to a biological response.

- Antagonist: Drugs that bind to a receptor but do not activate it, blocking the endogenous ligand from binding. This can prevent the receptor's normal function.

CENTRAL NERVOUS SYSTEM EFFECTS

- Stimulants: Increase CNS activity, leading to heightened alertness, increased energy, and improved mood. Examples include amphetamines and cocaine.

- Depressants: Decrease CNS activity, inducing relaxation, sedation, and sometimes anesthesia. Examples include benzodiazepines and barbiturates.

PERIPHERAL NERVOUS SYSTEM EFFECTS

Autonomic Nervous System Modulation:

- Sympathomimetic: Mimic the effects of the sympathetic nervous system, leading to increased heart rate, dilation of airways, and increased blood pressure. Examples include adrenaline and ephedrine.

- Parasympathomimetic: Mimic the effects of the parasympathetic nervous system, leading to decreased heart rate and smooth muscle contraction. Examples include acetylcholine and pilocarpine.

CARDIOVASCULAR EFFECTS

- Vasodilators: Relax blood vessels, leading to increased blood flow. Examples include nitroglycerin.

- Vasoconstrictors: Constrict blood vessels, raising blood pressure. Examples include epinephrine.

METABOLIC EFFECTS

- Hypoglycemic Agents: Lower blood glucose levels. Examples include insulin and oral antidiabetic drugs.

- Hyperglycemic Agents: Raise blood glucose levels. Examples include glucocorticoids.

Anti-inflammatory and Immunomodulatory Effects

- Anti-Inflammatory Agents: Reduce inflammation. Examples include nonsteroidal anti-inflammatory drugs (NSAIDs) and corticosteroids.

- Immunosuppressants: Suppress the immune system. Examples include cyclosporine and corticosteroids.

PSYCHOTROPIC EFFECTS

- Antipsychotics: Used to treat psychotic disorders by modulating neurotransmitters. Examples include haloperidol and clozapine.

- Antidepressants: Improve mood and alleviate symptoms of depression. Examples include selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressants.

ANALGESIC EFFECTS

- Opioids: Alleviate pain by binding to opioid receptors. Examples include morphine and oxycodone.

- Non-Opioid Analgesics: Provide pain relief through various mechanisms. Examples include acetaminophen and NSAIDs.

ASSESSMENT

- What all are the Receptor interactions ?
- What all are the Cardiovascular effects ?