CONTENT OF THE SUBJECT

Subject:	**Pharmacology 1**		
Study	*General Medicine*	**Study Period:**	*6. semester*
Evaluation:	*graduated*	**Subject Type:**	*Compulsory*
Content:	*3 h. lectures and 2 h. seminars / week*		*Total 70 hours*

Department: **Pharmacology UPJŠ FM**

Week	***Lectures*** https://portal.lf.upjs.sk/index-en.php	***Seminars***
1.	**Introduction to pharmacology.** *- Historical background.* *- General pharmacological principles.* *- Drug development.*	**Organization of practical exercises. General pharmacological principles. Basic pharmacological terminology. Drug names.**
2.	**Basic pharmacokinetic principles - I.** *- Passage of drugs across membranes.* *- Drug absorption.* *- Distribution of drugs.* *- Plasma protein binding of drugs.* *- Volume of distribution.* **Basic pharmacokinetic principles - II.** *- Hepatal and extrahepatal metabolism.* *- Factors influencing drug metabolism.* *- Renal and extrarenal excretion.* *- Factors influencing drug excretion.* *- Biological halflife.*	**Prescription of drugs, practical application.**
3.	**Mechanisms of drug action. (Pharmacodynamics).** **-** *Molecular aspects.* *- Major receptor families.* *- Drug - receptor interactions.* *- Agonists and antagonists.*	**Pharmacokinetic principles - I.** *- Transfer of drugs across membrane.* *- Drug absorption.* *- Routes of drug application.* *- Distribution.* *- Plasma protein binding.* *- Volume of distribution.*
4.	**Unwanted drug effects.** *- Adverse drug reactions.* *- Toxic drug reactions.* *- Type A-E reactions.* **Factors influencing drug action.** **Adrenergic neurotransmission and drugs affecting adrenergic nervous system.** *- Adrenergic neurotransmiters, receptors.* *- Adrenergic agonists.* *- Adrenergic antagonists.*	**Pharmacokinetic principles - II.** *- Drug metabolism.* *- Drug excretion.* *- Factors influencing drug metabolism and excretion of drugs.*
5.	**Cholinergic neurotransmission and drugs affecting cholinergic nervous system.** *- Cholinergic neurotransmiters, receptors.* *- Cholinergic agonists.* *- Cholinergic antagonists.* **Myorelaxants.**	**Pharmacodynamic principles of drug action.** *- Molecular aspects.* *- Drug - receptor interactions.* *- Second messengers.* *- Non-specific drug action.*

6.	**Pharmacology of CNS.** *- Chemical transmission in the CNS.* *- Drug action in the CNS.* *- Antipsychotics.* **Antidepressants. Antianxiety drugs. Hypnotics. Psychostimulants and psychodysleptics.**	**Unwanted drug effects.** *- Adverse drug reactions.* *- Toxic drug reactions.* *- Type A-E reactions.* *- Factors influencing drug action (age, disease, genetic factors).* **Control test.**
7.	**Drugs used to treat motor disorders.** **-** *Parkinson´s disease, pathophysiology.* *- Dopaminergic drugs.* *- Anticholinergic drugs.* *- Epilepsy, pathophysiology.* *- I. – III. generation of antiepileptics.*	**Drugs affecting adrenergic nervous system.** *- Adrenergic neurotransmiters, receptors.* *- Adrenergic agonists.* *- Adrenergic antagonists.*
8.	**General anesthetics.** *- Inhalatory.* *- Intravenous.* **Local anesthetics.** *- Mechanism of action.* *- Classification of local anesthetics.* *- Types of local anesthesia.* *- Toxicity.* **Opioid analgesics.** *- History.* *- Mechanism of action, receptors.* *- Classes of opioids.* *- Toxicity of opioids.*	**Drugs affecting cholinergic nervous system.** *- Cholinergic neurotransmiters, receptors.* *- Cholinergic agonists.* *- Cholinergic antagonists.* **Myorelaxants.**
9.	**Antipyretic analgesics.** *- Pain.* *- Mechanism of action, COX-1, COX-2.* *- Derivatives of salicylic acid.* *- Derivatives of aniline.* **Nonsteroidal antiinflammatory drugs.** *- Classes of NSAIDs, side effects.*	**Drugs influencing CNS.** *- Chemical transmission in the CNS.* *- Drug action in the CNS.* *- Antipsychotics.* **Control test.**
10.	**Drugs used in pharmacotherapy of respiratory disorders.** *- Antiasthmatic drugs* *- Antitusives, expectorans* **Drugs used in the pharmacotherapy of GIT disorders.** *- Drugs modulating stomach acidity* *- Cytoprotective drugs* *- Anti-H. pylori drugs* *- Laxatives, antidiarrheals.*	**Antidepressants, antianxiety drugs, psychostimulants and psychodysleptics. Hypnotics.**

<table>
<tr><td>11.</td><td>Histamine and pharmacological treatment of allergy.
I.-III. generation of H1 antagonists

Antiemetics. Antiserotonic drugs.</td><td>Drugs used to treat epilepsy and Parkinson´s disease.
- Parkinson´s disease, pathophysiology.
- Dopaminergic drugs.
- Anticholinergic drugs.
- Epilepsy, pathophysiology.
- I. – III. generation of antiepileptics.</td></tr>
<tr><td>12.</td><td>Drugs used in treatment of heart diseases.
Antianginal drugs.
- Organic nitrates
- Beta-blockers
- Ca²⁺-blockers
- Other drugs

Antihypertensive drugs.
- Diuretics.
- ACE-I/ARBs
- Beta-blockers
- Ca²⁺-blockers
- Other drugs</td><td>General anesthetics
- Inhalatory.
- Intravenous.
Local anesthetics.
- Mechanism of action.
- Classification of local anesthetics.
- Types of local anesthesia.
- Toxicity.

Control test.</td></tr>
<tr><td>13.</td><td>Drugs used to treat heart failure.
- ACE-I/ARBs
- Diuretics
- Beta-blockers
- Cardioglycosides
- Other drugs</td><td>Opioid analgesics.
- History.
- Mechanism of action, receptors.
- Classes of opioids.
- Toxicity of opioids.</td></tr>
<tr><td>14.</td><td>Drugs used to treat arrhythmias.
Hypolipidemics.
- Vaughan-Williams Classification
- Other antiarrhytmics
- Statins and other hypolipidemic drugs

Drugs used in disorders of haemostasis.
- Antithrombotics
- Hemostatics
Antianaemic drugs.
- Iron
- Vitamine B12
- Folic acid</td><td>Antipyretic analgesics.
- Pain.
- Mechanism of action, COX-1, COX-2.
- Derivatives of salicylic acid.
- Derivatives of aniline.
Nonsteroidal antiinflammatory drugs.
- Classes of NSAIDs, side effects.</td></tr>
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