

Projekt: Digitální učební materiály ve škole, registrační číslo projektu CZ.1.07/1.5.00/34.0527

Příjemce: Střední zdravotnická škola a Vyšší odborná škola zdravotnická, Husova 3, 371 60 České Budějovice

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Popis způsobu použití materiálu ve výuce:

Výuková elektronická prezentace, která je určena pro seznámení žáků se základními pojmy a popisem farmakologie v tematické oblasti Medical English. Materiál může sloužit jako názorná pomůcka doplňující výklad učitele, ale také je vhodná pro domácí přípravu žáků (např. zpřístupněním formou e-learningu). Materiál obsahuje zpětnou vazbu ověřující pochopení látky v podobě závěrečného snímku s otázkami k tématu.

Tento výukový materiál je spolufinancován Evropským sociálním fondem a státním rozpočtem České republiky.



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Pharmacology

Pharmacology

- **Pharmacology is a science relating to the action of drugs on the body. It is a medical science about drugs.**
- Giving medications is an important function of a nurse.
- The doctor determines what medication will be given, the dose, and the frequency of administration.

Pills



The Dosage

- However, the nurse administers almost all the medications patients receive.
- Therefore, knowledge of drugs is necessary for a nurse.
- **The dosage** refers to the size, frequency, and method of administration of a medication in order to obtain a special desired effect.

The Dosage

- **There are five categories of dosage for every medication:**
- 1) Minimal dose is the smallest amount of drug that will give the desired effect.
- 2) Maximal dose is the largest amount that can be administered safely.
- 3) Toxic dose is the amount that will cause dangerous side effects, or actually acts as a poison.

The Dosage

- 4) Lethal dose is the amount that will cause death.
- 5) Average dose is the amount that is effective for most patients.

The Dose

- **The dose** means the amount given at each administration of a drug. In some medications it is based on body weight.
- A medication is prescribed for a specific action, **the therapeutic effect**.
- It is a wanted effect. In addition, it often has other effects on the body.

Side Effects

- **The side effects** are not desirable, but some are unavoidable.
- If the side effects are severe for a certain patient, the drug is contraindicated for the patient and cannot be prescribed.
- Contraindications include pregnancy, eye disease, diabetes, high blood pressure, heart disease, and allergy.

Allergic Reaction

- An **adverse reaction** to a medication is more severe than a side effect because it is not expected. The most common are allergic reaction.
- The most serious allergic reaction is called **anaphylapsis** and is a medical emergency.
- The onset of anaphylapsis is usually rapid, occurring in the first minutes or seconds after injection of a medication, but sometimes occurs hours or even days later.

Local Effect

- Medication may be applied directly to the skin or mucous membrane to treat a local condition, so it has **local effect**.
- Examples of local (topical) medications are: antibiotic ointment applied to a wound to prevent infection, mouthwash, throat gargle, nasal drops, oils, lotions, creams, etc.

Systemic Effect

- When medications are absorbed into the bloodstream and carried throughout the body, and it is called a **systemic effect**.
- Medications that have a systemic effect are administered by the oral or parenteral routes.

Oral Administration

- **Oral administration is of three types:**
- a) A medication may be swallowed and absorbed through the digestive tract.
- b) Some medications in tablet forms are placed under the tongue to be absorbed through the mucous membrane.
- c) Buccal medications are placed between the gum and cheek to be dissolved and absorbed.

Pills



Oral Medications

- Oral medications are available in several forms such as:
- Tablets
- Capsules
- Liquids
- Powders, which should be dissolved in water.
- There are also several forms of liquid drugs: elixir, syrup, emulsion, oil, and solution.

Parenteral Administration

- Parenteral refers to any route other than the mouth, but generally the term is used to mean administration by injection.
- a) Intramuscular – injection into a muscle.
- b) Intradermal – injection into the outer of the skin.
- c) Intravenous – injection into a vein.

Parenteral Administration

- Other parenteral routes include:
- rectal route (e.g. suppositories)
- vaginal creams
- inhalation for absorption via respiratory tract, etc.

Antibiotics

- Antibiotics are used for treatment bacterial infection, like tonsillitis, pneumonia, and many other infections.
- The most common antibiotics are: penicillin, tetracycline, erythromycin, streptomycin, etc.
- The most famous ATB is probably penicillin which was discovered in 1929 in England by Alexander Flemming.

Questions:

- Can you define pharmacology?
- What is the difference between the dose and the dosage?
- What are the most common side effects/contraindications?
- What is the difference between a local effect and systemic effect?
- Can you define oral/parenteral administration?
- Who discovered penicillin?

Seznam použité literatury a pramenů:

1. VARCO, Tom [cit. 2012-12-08]. Dostupný pod licencí Creative Commons na WWW:
http://commons.wikimedia.org/wiki/File:Prozac_pills.jpg?uselang=cs
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