



SMART PHARMACOLOGY

LESSON 9

Task 1

Give a definition to the concept of «sulfonamides». Indicate the clinical significance of the drugs in this group at the present time.

Task 2

Give the classification of sulfonamides. To do this, refer the following drugs to the appropriate group and fill in the table.

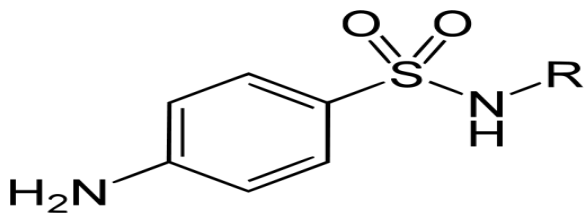
Classification	Drugs
Monocomponent	
Resorptive-acting (absorbed in the intestine)	
<i>Short-acting</i>	
<i>Long-acting</i>	
<i>Super long-acting</i>	
Acting in the intestine (poorly absorbed from the GIT)	
Derivatives of sulphonamides and 5-aminosalicylic acid	
For external use	
Combined	
Resorptive-acting (Sulfonamide+ Trimethoprim)	
For external use	

Algimaf
Co-trimoxazole
Mafenide
Phthalylsulfathiazole
Salazosulfapyridine
Silver sulfathiazole

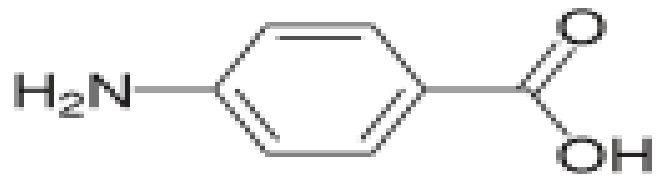
Streptonitol
Sulfacetamide
Sulfadimethoxine
Sulfamethoxypyrazine
Sulfanilamide
Sulfathiazole

Task 3

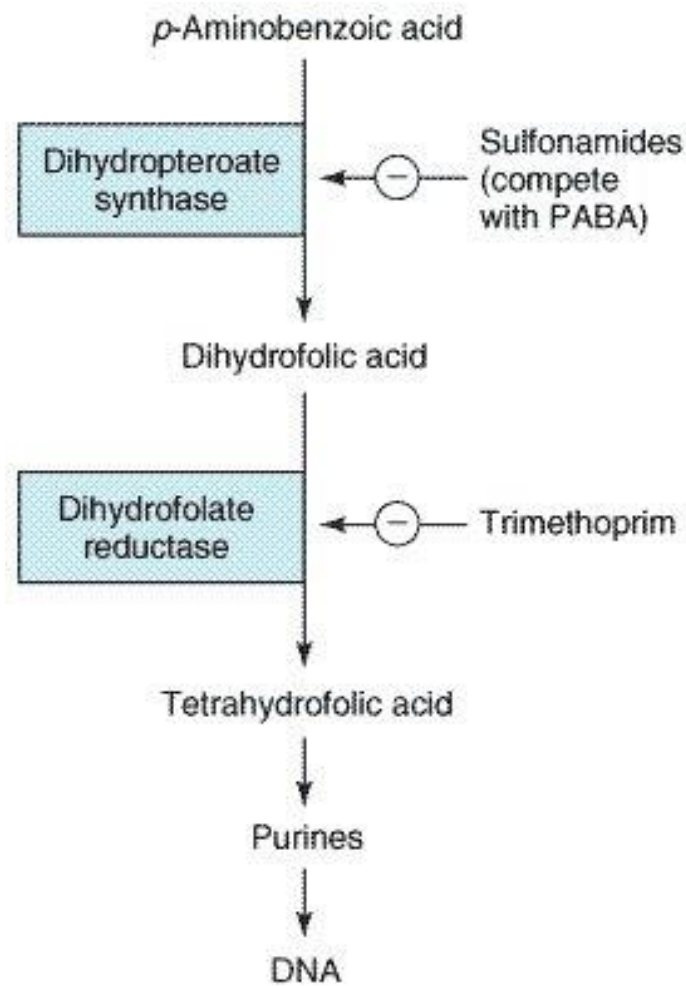
Discuss the mechanism of sulfonamides action.



Sulfanilamide



Para-aminobenzoic acid



Task 4

Discuss the pharmacodynamics (effects) of sulfonamides and combine the pharmacological effects/side effects and indications/contraindications for this group of drugs.

Pharmacodynamics (effects)	Indications
The antibacterial effect. The type of action is bacteriostatic or bactericidal. The broad spectrum of action: microorganisms that synthesize the folic acid – staphylococci, streptococci, pneumococci, gonococci, meningococci, causative agents of intestinal infections (Salmonellas, Cholera vibriion, E.coli), chlamydias, protozoa (malarial plasmodium, toxoplasms)	
Side effects	Contraindications
Crystaluria, agranulocytosis, leukopenia; teratogenicity	

Indications/ Contraindications

Infectious diseases: quinsy, bronchitis, pneumonia, intestinal infections, cystitis, urethritis, prostatitis, cholecystitis, meningitis, otitis, wound infection, malaria

Renal insufficiency, blood formation disorders; pregnancy, lactation

Task 5

Discuss the pharmacokinetic characteristics of sulfonamides. To do this, fill in the table all the necessary information.

Routes of administration:	
Absorption (depending on lipophilicity):	
Distribution:	
Metabolism:	A. Biotransformation (acetylating): B. Biotransformation (glucuronization): Factors affecting the metabolism of SA:
Excretion:	

Task 6

Discuss the principles of sulfonamides dosing. What does it mean «loading doses» «maintaining doses»? Fill in the table all the necessary information.

Drugs	Loading doses	Maintaining doses
Short-acting	___ g per day – Day 1 ___ g per day – Day 2 ___ g per day – Day 3	___ g – 4, 5, 6, 7-day
The daily dose is divided into 6 receptions through every 4 hours		
Long-acting	___ g a day – Day 1	___ g / day
Doses adopted at one time		
Super long-acting	___ g per day – Day 1	___ g per day – Day 1

Task 7

Fill the table about drug-drug interactions of sulfonamides and indicate the result of interaction.

Sulfonamides	Other drugs/groups	Result of interaction
Sulfonamide	Novocain	
Sulfonamide	Novocainamid	
Sulfonamide	Penicillin	
Sulfonamide	Chloramphenicol	
Sulfonamide	Tetracycline	

Task 8

Give the pharmacological characteristics of the combined sulfonamides. What are the advantages of the combined sulfonamides?

Sulfamethoxazole 5:1 Trimethoprim → Co-trimoxazole (Bactrim, Biseptol)



Advantages of combined SA:

- 1.
- 2.
- 3.
- 4.
- 5.

Task 9

Give the pharmacological characteristics of the sulfonamides for local use. Specify the features of the use of drugs.

Task 10

What are the possible side effects that occur when using local sulfonamides? Consider possible ways to prevent side effects.