TYPES OF INFECTION AND SULFONAMIDES

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Introduction. Sulfonamides are the first antibacterial agents of a wide spectrum of action, which have found application in medicine as systemic bacteriostatics. Their discovery was of an accidental nature and was associated with the textile industry.

Aim. The aim of the work is to study the discovery of sulfonamide drugs, the analysis of drugs and dosage forms containing p-aminobenzosulfonamide and its derivatives.

Materials and methods. Analysis of the scientific literature and the results of the advanced research in the field of medicine and pharmacology.

Results and discussion. Sulfanilamides are classified as structural analogues of p-aminobenzoic acid, a precursor of folic acid. All compounds are derivatives of sulfonamide (sulfanilic acid amide) obtained by replacing the hydrogen atom in the amide group. Sulfonamide exhibit bacteriostatic action competitively inhibiting digidropteroat synthetase that interferes with the formation of dihydrofolic acid and tetrahydrofolic acid, respectively, required for synthesis of purine and pyrimidine bases. As a result, the growth and multiplication of microorganisms is suppressed. Initially sulfonamides were active against a broad spectrum of gram-positive (S.aureus, S.pneumoniae et al.), Gram (gonococci, meningococci, H.influenzae, E.coli, Proteus spp., Salmonella, Shigella, etc.) Bacteria. In addition, they act on chlamydia, nocardia, pneumocysts, actinomycetes, malarial plasmodia, toxoplasm. Currently, many strains of staphylococci, streptococci, pneumococci, gonococci, meningococci, Enterobacteriaceae characterized by a high level of acquired resistance. Natural resistance is possessed by enterococci, Pseudomonas aeruginosa and most anaerobes. Sulfonamides are synthetic agents with active antimicrobial properties. Acute poisoning with sulfonamides is rare, more frequent toxic manifestations in the systematic treatment of them. The defeat of the kidneys is most often caused by sulfonamides with a high percentage of acetylation, and conversely, drugs that do not acetylate do not possess these properties. The latter include sulfonamides long (sulfapiridazin et al., In which the acetylation is 10%) and extremely long (sulfalen, which is generally not subject to acetylation) action. Most often, liver damage develops with prolonged and uncontrolled use of sulfanilamides against the background of already existing liver pathology. Clinical lesions of the liver are manifested in the form of mild or moderate jaundice and an increase in the size of the organ. Sulfonamide drugs with prolonged use can cause leukopenia and agranulocytosis. Sulfanilamide preparations contribute to the large formation of methaemoglobin, which can lead to the development of oxygen starvation (hemic hypoxia). A great advantage of sulfonamides in front of antibiotics is that they do not cause dysbacteriosis, the main complication of antibiotic therapy. Sulfanilamides by activity are much inferior to modern antibiotics and at the same time are characterized by high toxicity. Most clinically relevant bacteria are currently resistant to sulfonamides.

Conclusions. Sulfanilamide preparations are among the chemotherapeutic agents. Sulfonamide prescribed for nocardiosis, toxoplasmosis, infectious diseases of the respiratory system (angina, pneumonia, bronchitis, tonsillitis), acute and chronic urinary tract infections (cystitis, pyelitis), and others. Upon receiving these drugs prescribing physician dosage must be strictly observed.