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Using medications together.

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Abstract

In pharmacotherapy (also in phytotherapy), it is often necessary to use several drugs at the same time. The main goal is to achieve a faster and stronger pharmacotherapeutic effect or to increase the effectiveness of drugs by affecting several organ systems and reducing their side effects. As a result of the simultaneous introduction or sequential administration of several drugs into the body, their effects may change in various ways. When several drugs are used in this way, synergism or antagonism may occur.

Keywords:

Classification Synergism - a one-way effect that is stronger when two drugs are combined than when they are used separately. This leads to summation and potentiation. In combination, the total pharmacological effect of drugs is equal to the sum of the effects of individual drugs. In this type of combination, the site of action of the drugs is common (one receptor, cell, system) and the same. For example, ether and the effect of nitric oxide (I) on the central nervous system, adrenaline and noradrenaline on adrenoreceptors. In potentiation - the total pharmacological effect is several times stronger than the sum of the effects of individual drugs, and in some cases new pharmacological properties appear (aminazine and anesthesia, painkillers). In this case, the effect is in one general direction and is directed at different systems. This type of synergism is widely used in medical practice. For example, antibiotics with sulfonamides, hypnotics, neuroleptics, acetylsalicylic acid, pilocarpine). This is called direct synergism. Synergism can also be indirect. In direct synergism, the site of action of the drugs used is common, as mentioned above (one cell, tissue, receptor), while in indirect synergism it is different. For example, atropine blocks M-cholinoreceptors and dilates the pupil, while adrenaline adrenoreceptors, causing this effect. The potentiation type of drug synergism is widely used in medical practice, especially in anesthesiology. Since in this case, a small dose of these drugs is taken, their complications and side effects are less. Antagonism means

reducing or completely eliminating the effect of one drug by the effect of another drug.

The use of the antagonism method is a set of measures for the prevention and treatment of poisoning. Antagonism is understood as the opposite (opposite) effect of drugs on each other. Antagonism can take several forms: Physical antagonism - the adsorption of one substance on the surface of another substance (adsorbents, activated carbon, proteins). Chemical antagonism - the formation of harmless compounds as a result of a chemical reaction. For example, if sodium sulfate is administered in case of barium chloride poisoning, barium sulfate, which is harmless to the body, is formed. Unithiol is used in case of poisoning with heavy metal salts. The sulfhydryl substance in it combines with the metal and forms a harmless complex. 46 Physiological (pharmacological) antagonism - drugs act on one or more cells, receptors or systems, causing the opposite effect (narcotics and analeptics). This antagonism can be bilateral (drugs mutually neutralize each other's effects) and unilateral (the latter does not eliminate the effect of the former). An example of bilateral antagonism is caffeine and phenobarbital (phenobarbital inhibits the central nervous system stimulating effect of caffeine and vice versa). An example of unilateral antagonism is atropine and pilocarpine. Atropine blocks cholinergic receptors, eliminating the constriction of the pupil caused by pilocarpine and dilating it. However, pilocarpine cannot eliminate the dilation of the pupil caused by atropine. This means that atropine is a treatment for pilocarpine poisoning, but pilocarpine does not cause blindness in atropine poisoning. There are the following types of pharmacological antagonism. Competitive antagonism - competition between compounds with similar chemical structures for binding to the receptor is observed (morphine and nalorphine). Direct antagonism - two drugs bind to the same receptors Directly - directly - causing an opposite effect. For example, muscarine stimulates M-cholinoreceptors, and atropine blocks them. Indirect antagonism - drugs act on different antagonistic physiological systems, causing an opposite effect. For example, pilocarpine stimulates M-cholinoreceptors and narrows the pupil, while adrenaline stimulates adrenoreceptors and dilates it. The incompatibility of some drugs with each other can also occur in their pharmacokinetics. For example, drugs that reduce the absorption of drugs from the intestine (adsorbents, mucus, laxatives), anticoagulants (neodicoumarin) bound to blood proteins can be displaced by indomethacin (an anti-inflammatory drug), inducers that increase the activity of monooxidase enzymes involved in the metabolism of

drugs (phenobarbital, benzonal) can lead to an increase in the activity of various drugs when administered together. weakening of the pharmacotherapeutic effect, etc.

As a result of repeated use of some drugs, their effects may change in various ways. For example, their effect may increase, decrease, or undergo qualitative changes. The decrease in the effect is a sign of getting used to the drug. This phenomenon is characteristic of all living beings and is called tolerance - habituation or adaptation, and occurs with prolonged use of these drugs. For example, addiction to sleeping pills occurs within 1-2 weeks. Adaptation to antibiotics in microorganisms may occur after a few days. The mechanisms of adaptation are complex and may be due to a decrease in the absorption of the drug from the intestine or its metabolism, accelerated excretion from the body, or due to the production of biologically active substances by microorganisms against the drug or a decrease in the sensitivity of the receptors affected by the drug (see the following pages). Repeated administration of the drug several times with a short interval The decrease in its effect during use causes tachyphylaxis. This condition is clearly manifested in the effect of ephedrine on blood pressure. Therefore, when treating patients with such drugs, including herbal remedies, it is necessary to increase their dose or add or replace them with drugs with a similar effect that have a different mechanism of action.

References:

1. M.N. Maksumov, M.M. Malikov “Pharmacology”. Tashkent., 2006.
2. M.N. Maksumov, X.X. Kholmatov “Phytotherapy with the basics of pharmacology”.
3. Tashkent., 2003.
4. B.A. Samura, L.T. Malaya “Phytotherapy in the clinic of internal diseases”. Kharkov. 2003.
5. M.D. Mashkoveni “Medicinal agents” (1 – 2 volumes). Moscow. 2004.