PHARMACOLOGY OF HEPATOPROTECTORS

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The past century was marked by the creation of drugs that act directly on the causative factors of diseases. At the same time, the etiology of many diseases has not yet been established, which does not allow us to write off pathogenetic drugs that have a suppressive effect on the primary or secondary mechanisms of the development of the pathological process, especially in relation to hepatology.

Hepatoprotectors are drugs that improve metabolic processes in the liver, increase its resistance to pathogenic effects, and also help restore its functions in case of various injuries. Various pharmacological agents that improve metabolic processes in the body, inhibit lipid peroxidation, have antihypoxic activity, protect mitochondria, slow down collagen synthesis and increase collagenase activity can exhibit a hepatoprotective effect to one degree or another. Thus, the group of hepatoprotectors is heterogeneous and includes substances of various chemical structures with multidirectional effects on metabolic processes. Despite many years of clinical experience and a large number of scientific studies, the boundaries of their application have not yet been delineated [1].

Hepatoprotective agents can be divided by origin into several groups:

1. Hepatoprotectors of plant origin containing natural or semi-synthetic flavonoids;
2. Phospholipid preparations;
3. Preparations of animal origin (organ preparations);
4. Hepatoprotectors - derivatives of amino acids;
5. Selenium-containing preparations;
6. Ursodehydrocholic acid preparations;
7. Synthetic preparations;
8. Drugs of other groups.

Hepatoprotectors today account for 9.2 % of the total number of medicines. Today, hepatoprotective drugs must have a number of requirements:

1. Well absorbed in the gastrointestinal tract;
2. Have the effect of the first passage through the liver;
3. Maintain the ability to natural metabolism in liver pathology;
4. Possess enterohepatic circulation; the ability to prevent the formation or bind highly active damaging compounds; anti-inflammatory properties; the ability to suppress; fibrogenesis; stimulate liver regeneration; low toxicity.

Unfortunately, none of the hepatoprotectors currently available on the pharmaceutical market fully meets these requirements, so the search for new compounds that can prevent and eliminate liver damage is relevant.

References:

1. Tedesco, D., Tava, A., Galletti, S., Tameni, M., Varisco, G., Costa, A., Steidler, S. (2004). Effects of silymarin, a natural hepatoprotector, in periparturient dairy cows. *Journal of dairy science*, Vol.87, Is.7, 2239-2247. DOI 10.3168/jds.S0022-0302(04)70044-2