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MODERN APPROACHES IN THE DEVELOPMENT OF DRUGS FOR THE TREATMENT OF HEPATODYSTROPHY IN COWS

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In the treatment of liver pathology an important place belongs to hepatoprotectors, which restore the structure of hepatocytes or prevent their pathology. These drugs are hepabial carnitine, hepavex 200, heparenol, hepatonik tm, cyanophore, hepacarnitol, hepaton, hepatron and feed additives - vegashol bicahepar, choline chloride, methionine, fosbevit, katovil R and others. (Levchenko, VI, Bogatko, LM, Bezukh, VM, Moskalenko, VP, Melnik, A. Yu. 2014).

Oral administration of hepatoprotectors with food or water may not be effective due to the peculiarities of digestive processes in ruminants, scar microflora may convert these drugs into other substances, reducing their effectiveness or making them ineffective, this issue is controversial and needs further study. Therefore, work has recently begun on the development of injectable hepatoprotectors for cattle.

In order to find the most effective method of pharmacoprophylaxis and pharmacotherapy of hepatosis and fatty liver disease in cows (Belugin NV, Pisarenko NA, Konobeysky AV 2014) used the drug company "Api - San" "Hepatodect", to his composition includes L-ornithine, L-citrulline, L-arginine, betaine, sorbitol, lidocaine hydrochloride. The drug was administered intravenously at a dose of 100 ml once a day. According to the manufacturer, L-ornithone reduces elevated ammonia levels in liver disease. L-citrulline - activates the formation of urea and its excretion from the body. L-arginine - plays an important role in the cycle of urea formation, regulates arterial tone, activates cellular metabolism, promotes neutralization and excretion of ammonia, stimulates the release of growth hormone from the pituitary gland, regulates blood sugar. Betaine has hepatoprotective, choleretic, lipotropic action, activates metabolic methylation in the liver. Sorbitol has osmotic, detoxifying, choleretic effect. The use of the drug leads to the normalization of metabolism and liver function, increase appetite, productivity and improve the general condition of cows with hepatodystrophy. But it should be noted the significant cost of the drug.

Hepalen has been developed at the Institute of Animal Biology. Efficacy studies have been performed on cows with hepatodystrophy, the drug was administered intramuscularly. It contains an aqueous extract of crushed fruits of milk thistle, oil from the seeds of milk thistle, alpha-tocopherol acetate (vitamin E), squalene (derived from amaranth), tween-80, lecithin. The publication proves that "Hepalen" helps to improve liver function and stabilize the structure of liver cells (Pristupa OI, Petrukh IM, Simonov MR, etc. 2012)

According to (Dushkin EV 2012) who studied the hepatoprotector "Antitox" which consists of amino acids of liver tissue of clinically healthy animals obtained by hydrolysis, and therefore its introduction into the body by injection allows you to send the drug directly to the liver, as in the body there is a genetically modified dependence

on the use of ingredients derived from similar tissues. Antitox is given by injection subcutaneously, intramuscularly or intravenously once a day.

There is a method of using the phytopreparation lucevita in hepatosis of cows (Khazimukhametova IF, Idrisova PP, 2008). 20% aqueous solution of lucevit at a dose of 25 mg / kg body weight intramuscularly once daily for three days three times with an interval of three days. The drug contains a number of biologically active substances (sterols, vitamins, amino acids, sugars, macro-and micronutrients), which are involved in the neutralization of food toxins in the liver and small intestine, have hepatoprotective and choleretic effects.

To date, the exact mechanism of action of hepatoprotectors in cattle is insufficiently studied and in most cases can be considered only predictable. This, in turn, makes it difficult to develop and recommend for use.

The above drugs are not available in commercial form except for "Hepatoject" company "Api - San", but the latter is not economically viable for the treatment of cows. The development of low-cost, effective injectable hepatoprotectors for cattle is a pressing issue.