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Pharmacological Properties of the Hepatoprotector "Gepanorm"

Orzieva O. Z.

Bukhara State Medical Institute, Department of Pharmacology and Clinical Pharmacology

Abstract: The article is devoted to the current state of the problem of the pathology of the hepato-biliary tract in the Republic of Uzbekistan today. Wide registration of hepatoprotective drugs for the treatment of patients with chronic hepatitis and liver cirrhosis allows to solve this problem to some extent. However, the high cost of drugs poses a challenge for the government to introduce domestic drugs to ensure the availability of treatment to all segments of the population. Thus, despite significant progress in the strategy for the elimination of chronic hepatitis and cirrhosis of the liver, a number of problems remain relevant and cause significant difficulties in achieving the global goal.

Keywords: hepato-biliary tract, chronic hepatitis, liver cirrhosis, preparations for the liver, hepatoprotector.

Relevance

Chronic viral hepatitis is a group of infectious diseases that cause inflammation of the liver tissue and are caused by a virus that can infect the liver tissue. Viral hepatitis is spreading worldwide at an alarming rate. This is facilitated by the significant prevalence of injecting drug addiction, and the increasing looseness of people's sexual behavior, as well as many other factors. Viral hepatitis B and C attract the most attention today. Viral hepatitis B in most cases has a better prognosis, but its prevalence throughout the world has taken on a huge scale. Hepatitis B is also called serum hepatitis. This name is due to the fact that infection with the hepatitis B virus can occur through the blood, and through an extremely small dose. The hepatitis B virus can be transmitted by injection with non-sterile syringes from drug addicts, from mother to fetus, and also through sexual contact [1, 9].

Hepatitis B is characterized by liver damage and occurs in different ways: from carriage to acute liver failure, cirrhosis and liver cancer. From the moment of infection to the onset of the disease, 50-180 days pass. In typical cases, the disease begins with fever, weakness, joint pain, nausea and vomiting. Sometimes there are rashes. There is an increase in the liver and spleen. There may also be darkening of the urine and discoloration of the feces [2,3,10].

The proportion of viral hepatitis C in the incidence is somewhat less, but one cannot be completely sure of this, since this hepatitis proceeds unnoticed and is not in vain called the “gentle killer” - liver damage in viral hepatitis C progresses rapidly in apparently healthy people and often leads to cirrhosis of the liver or even to hepatocellular carcinoma. Therefore, although the official incidence of viral hepatitis C is always lower than viral hepatitis B, the exact number of patients with viral hepatitis C remains unknown. Hepatitis C is the most severe form of viral hepatitis, also called post-transfusion hepatitis. This means that they fell ill after a blood transfusion. Sexual transmission is possible, as well as from mother to fetus, but they occur less frequently [2,11].

From the moment of infection to clinical manifestations, it takes from 2 to 26 weeks. This is in the event that a virus carrier is not diagnosed, a condition when the virus has been in the body for many years, and the person is the source of infection. In this case, the virus can directly act on liver cells, eventually leading to a liver tumor. In the case of an acute onset of the disease, the initial period lasts 2-3 weeks, and, as with hepatitis B, it is accompanied by joint pain, weakness, and indigestion. Unlike hepatitis B, fever is rare. Jaundice is also uncommon for hepatitis C [5, 6].

The greatest danger is the chronic form of the disease, which often turns into cirrhosis and liver cancer. Chronic viral hepatitis, due to the peculiarities of epidemiology, most often affects young people, many of whom, in the absence of adequate treatment, die by the age of 40-45 from cirrhosis or liver cancer. Alcohol, simultaneous infection with several hepatitis viruses and HIV can accelerate the progression of the disease [3, 12].

According to WHO statistics, about 2 billion people suffer from viral hepatitis or have had it in the past. It is customary to consider such types of viral hepatitis: A, B, C, D, E, F, G. All of them lead to the development of liver disease, and are also dangerous due to the possibility of the disease flowing into a chronic form, which is characterized by a sluggish course, as a result of which the disease can be discovered at a late stage. At least 60% of liver cancer cases are associated with late diagnosis and treatment of viral hepatitis B and C. It is hepatitis B and C that are considered the most dangerous today. According to statistics, among all deaths from hepatitis, they account for 96% [4,13].

One of the most significant clinical achievements of the last decade has been the introduction of direct-acting antiviral drugs (DAAs) into the treatment regimens for chronic viral hepatitis C. Until 2019, the treatment of CHC in the Republic of Uzbekistan was limited to the use of interferon preparations, as well as various hepatoprotectors in complex therapy. Therapy with interferon preparations of these groups has a number of significant disadvantages: low efficiency and poor tolerability, incl. with the development of serious adverse events (long-term febrile fever, weight loss of more than 10%, cytopenia, alopecia, neurotic disorders, provocation of autoimmune reactions, etc.). Therefore, recently, treatment has been started immediately in a complex way, adding various plant components to therapy for a less toxic effect on the body. [2, 8].

In the pathogenesis of acute and chronic viral hepatitis, the central link is the cytolysis syndrome, which is understood as an increase in the permeability of hepatocellular and subcellular membranes, which leads to the loss of biologically active substances by hepatocytes, primarily hepatocellular enzymes and, as a result, to a violation of all types of metabolism, including the processes of biological oxidation: conjugated bilirubin in the blood increases, the synthesis of albumin and blood coagulation factors decreases, the excretion and passage of bile into the intestine is disturbed, which, in turn, leads to disruption of the processes of digestion and assimilation of vital substances [7].

Therefore, in all forms of both acute and chronic hepatitis, the prescription of drugs aimed at stabilizing cell membranes and restoring the passage of bile is pathogenetically justified.

The proposed dietary supplement contains all the necessary substances, the use of which in complex therapy has an effective effect in acute and chronic diseases of the liver and gallbladder. This dietary supplement has anti-inflammatory, antibacterial, antispasmodic and healing effects.

Purpose of the study

The purpose of this study is to expand the range of domestic medicines for the treatment of diseases of the hepato-biliary tract. This dietary supplement was created on the basis of environmentally friendly medicinal plants, based on the flora of Uzbekistan, taking into account their compatibility and the content of a complex of biologically active compounds.

Materials and methods of research

The composition of the biologically active additive includes the roots of elecampane (Inula radices L.), extract of the roots and rhizomes of rosea rhodiola (extractum radicum et rhizomatis Rhodiolae roseae L.), roots of medicinal rhubarb (medicinae radices Rheum L.), oregano herb extract (Origano herba extract L.), thyme herb extract (Thymum herba extractum L.), hypericum perforatum

extractum L. extract, peppermint leaf extract (folium Mentha piperis extractum L.), licorice root extract (Licorice radix extractum L.), grass mountaineer bird (herbae Gramen avium L.). All these herbal components individually have a wide range of different effects, however, it is in this combination that they provide a powerful hepatoprotective effect, protecting hepatocytes from premature apoptosis. Dried extracts of these components were taken in equal proportions and given the name "Hepanorm".

To determine the comparative effect of Hepanorm, the drug "Gepabene" (manufactured in Germany) was used, which also consists of a number of plant components and is widely used in the complex therapy of the hepatobiliary tract.

For the experiment were selected white outbred rats in the amount of 45. The first group consisted of 30 rats that were selected for the experiment. The remaining 15 rats made up the control group. All rats were kept in exactly the same conditions and ate a balanced diet identically both in the experimental group and in the control group. Drinking water was supplied to the animals twice a day. In order to clarify the nature of the action of this drug on the secretory function of the stomach, fistulated rats were orally administered the drug at a dose of 0.15 mg/kg for 20 days. Intact rats received no drugs. The drug "Gepabene" was taken as a standard.

The nature of the therapeutic effect of the tested biologically active additive "Gepanorm" was judged by the level of increase in the volume of gastric juice collected 1-3 hours after administration, as well as by the degree of increase in the main components of its composition - the concentration of total hydrochloric acid and pepsin.

The results of their discussion

The results of the experiment showed that under the influence of the dietary supplement "Gepanorm" there was a more favorable dynamics of clinical and laboratory parameters than in the control (comparison) group. At a dose of 0.15 mg/kg body weight, the test agent caused active stimulation of gastric secretion. 1-3 hours after intragastric administration of the drug, the volume of gastric secretion increased by more than 3 times 0.8±0.05 versus 0.2±0.002 ml in control animals.

Biochemical parameters in rats treated with the test agent normalized faster than in rats of the comparison group. Thus, the level of total bilirubin in rats before the administration of the test agent was 45.6 ± 1.5 μmol/l, by day 10 it decreased to 26.2 ± 1.5 μmol/l, while in rats of the control group these figures were 42 .2±5 μmol/l and 32.5±5 μmol/l, respectively.

The obtained results make it possible to recommend the dietary supplement "Hepanorm" as a stimulator of gastric secretion in atrophic, anacid and hypoacid gastritis.

A contraindication for the use of the drug is the presence of hyperacid gastritis in a patient, as well as peptic ulcer of the stomach and duodenum in the acute stage of the disease.

Conclusions

Thus, the results of the experiment show that the dietary supplement "Hepanorm", obtained from the collection of herbal components, can be recommended to patients in complex therapy for acute and chronic diseases of the hepato-biliary system, since it has a choleretic and hepatoprotective property and can replace the well-known Indian drug "Gepabene".

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