WEB OF SCIENTIST: INTERNATIONAL SCIENTIFIC RESEARCH JOURNAL
ISSN: 2776-0979, Volume 6, Issue 12, December- 2025

EFFECTIVE AND SAFE USE OF CARSIL

Хакбердиева Г. Э.
Касимова Ш. Ш.
Абдуразакова Ш. А.
Ташкентский государственный медицинский университет

Abstract
For a modern person, it is important to effectively protect the liver, an organ that performs the functions of a huge biolaboratory in the body. Currently, a very large number of foods, drinks containing nitrates and taking medicines that require liver protection are relevant. The mechanism of hepatoprotective action of silymarin is due to membrane-stabilizing, antioxidant and metabolic effects silibinin, due to which it interacts with reactive oxygen species and free radicals in the liver, converting them into less aggressive compounds.

Keywords: Preparations containing milk thistle, hepatoprotector, alcoholic liver damage, silymarin.

Introduction

Topicality. For a modern person, it is important to effectively protect the liver, an organ that performs the functions of a huge biolaboratory in the body. At present, a very large number of foods, drinks containing nitrates and taking medicines that require liver protection are used. For this purpose, hepatoprotectors of various origins are used. Drugs stimulate the production of glutathione reductase and superoxide dismutase, which activate the body's own systems of protection of tissues from products peroxidation, preventing the destruction of cell structures. The antioxidant activity of silymarin is 10 times higher than that of tocopherol. Silymarin protects not only liver cells, but also blood cells from the action of such agents, increasing their osmorigidity. The anti-inflammatory properties of silymarin are realized by suppressing the synthesis of pro-inflammatory leukotrienes in Kupffer cells. Silymarin also inhibits tissue inflammation by inhibiting the migration of neutrophils, Kupffer cells, leukotriene synthesis and prostaglandin formation. Carsil is the only drug with a natural composition, the hepatoprotective effect of which has been confirmed by clinical trials.

Goals and objectives. Ensuring the effective and safe use of carsil.

Materials and methods. Analysis of literature data and clinical observations on the use of hepatoprotectors.

Results of the study

The liver is a central organ in the digestive process, playing a key role in protecting the body from the effects of toxic substances (both xenobiotics and drugs). It is responsible for the metabolism of proteins, fats, carbohydrates, synthesizes and converts hormones, vitamins, bile acids and other critical biological compounds Drinks.

One of the components of pathogenetic and symptomatic therapy are drugs that have a protective hepatoprotective effect, increase the functional ability of hepatocytes, increase the detoxification capabilities and excretion of active metabolic products, stimulate protein synthesis and regenerative-reparative processes, bind free radicals, prevent the destruction of cell membranes, and also increase the resistance of hepatocytes to various influences.

At present, various groups of hepatoprotectors are used. Carsil is the only drug with a natural composition, the hepatoprotective effect of which has been confirmed by clinical trials. One of these preparations is Carsil of plant origin, which contains a dry extract of the fruits of Milk Thistle. It contains important biologically active substances, such as silymarin, which help protect the liver from harmful effects, improve its functions and stimulate regeneration processes. The healing qualities of milk thistle have been known to people for a long time, but only in the XX century scientists studied its biochemical composition. Today, milk thistle is one of the most studied plants. The hepatoprotective properties of the active components of milk thistle have been scientifically confirmed. In the 60s of the last century, it was shown that silymarin is a complex of flavonoids silybinin, silycristin and silidianin. Among them, the main ingredient is silibinin, which accounts for 8-9% of the extract [3,10]. According to pharmacokinetic studies, silymarin, after a single oral dose, is rapidly absorbed into the gastrointestinal tract, reaching its maximum concentration in the blood after 3-6 minutes. With constant, regular intake, a stable level in the blood is established on the second day of therapy. Silymarin accumulates mainly in the liver and kidneys, does not bind to proteins. Most of the silymarin is found in the cytoplasm of hepatocytes, while in the nuclei its concentration is 1–2 times less. The flavonoid complex is metabolized in the liver by conjugation with glucuronic and sulfuric acids without affecting the microsomal oxidation system; Therefore,

concomitant use with other drugs does not affect the pharmacokinetics and pharmacodynamics of drugs. At the same time, with flavonoid insufficiency, the metabolism of the drugs used in the liver decreases. The excretion of silymarin from the body occurs mainly with bile, and only a small amount is excreted in the urine. Glucuronides and silymarin sulphates are deposited in the bile, and once in the intestine, they are broken down by enzymes produced by representatives of the intestinal microbiota. When silymarin is consumed, it circulates between the intestines and the liver, forming the so-called enterohepatic circulation, which allows the active substance to remain in the body for a long time even after the end of treatment. Silymarin has low toxicity, and its use in recommended doses does not cause harm to human health [1].

The mechanism of hepatoprotective action of silymarin is due to membrane-stabilizing, antioxidant and metabolic effects. During liver damage, under the influence of various negative factors, there is an increased production of free radicals, accompanied by damage to the mitochondria of hepatocytes. Disruption of oxidative phosphorylation processes in mitochondria is accompanied by the development of energy deficit and cell death. Excess peroxidation compounds play an important role in fibrogenesis by activating liver stellate cells and enhancing extracellular matrix production.

The antioxidant effect is due to the presence of a phenolic structure in the silibinin molecule, due to which it interacts with reactive oxygen species and free radicals in the liver, converting them into less aggressive compounds. In addition, the drug stimulates the production of glutathione reductase and superoxide dismutase, which activate the tissues' own defense systems against peroxidation products, preventing the destruction of cell structures. The antioxidant activity of silymarin is 10 times higher than that of tocopherol. Silymarin protects not only liver cells, but also blood cells from the action of such agents, increasing their osmoresity [2,9].

The anti-inflammatory properties of silymarin are realized by suppressing the synthesis of pro-inflammatory leukotrienes in Kupffer cells. Silymarin also inhibits tissue inflammation by inhibiting the migration of neutrophils, Kupffer cells, leukotriene synthesis and prostaglandin formation. The use of silymarin helps to reduce the permeability of membranes, which is manifested by a decrease in the level of hepatic transferases, γ-glutamine transferase. In addition, silymarin reduces the content of cholesterol and low-density lipoproteins in the blood in dyslipidemia [13].

An important direction of the metabolic action of silymarin is the ability to stimulate protein synthesis and support the process of hepatocyte regeneration. Silymarin induces RNA synthesis; at the same time, the rate of DNA transcription in malignant

cells, as well as the rate of their division, does not increase, which excludes the possibility of stimulating tumor growth.

The intake of silymarin helps to reduce plasma levels: ALT, AST, γ-glutamyltransferase, total bilirubin, procollagen, III-peptide, a decrease in the content of this indicator indicates an inhibition of the development of fibrosis [7,8].

Silymarin stimulates the activity of the enzyme collagenase, which breaks down the components of connective tissue, reducing the accumulation of collagen. By binding the products of peroxidation, silymarin stops the foci of hepatocyte necrosis and reduces the activity of stellate cells that produce connective tissue components. In vitro, silymarin blocks the proliferation of Kupffer cells and reduces the release of transforming β growth factor. Long-term administration of the drug for about 6 months reduces the activity of the cytotoxic link of the content of cytotoxic lymphocytes CD8+ and the production of γ-globulins [4, 12].

The mechanism of the protective effect of silymarin in alcoholic liver damage is explained by its ability to block the production of acetaldehyde, a toxic intermediate product formed during the metabolism of ethyl alcohol, as well as its antioxidant activity. Under the action of ethanol, silymarin neutralizes its negative effect on the liver by stimulating the synthesis of phosphatidylcholine. In alcoholic liver disease, silymarin is prescribed at a dose of 42 mg/day for 6 months. contributed to a significant increase in the activity of superoxidase and the content of substances with sulfhydryl groups in the serum. At the same time, there was a significant decrease in the concentration of substances exhibiting the properties of oxidants of malondialdehyde, etc., in the blood serum. This indicates an increase in the antioxidant potential of tissues [6].

Silymarin prevents the penetration of some hepatotropic poisons into the cell. This property underlies its therapeutic effect in poisoning with a variety of poisonous substances, in particular α-amanitin, the venom of the toadstool. Silymarin at a dose of 2–48 mg/kg per day for antidote therapy in toadstool poisoning. For the same purpose, silymarin is prescribed for liver damage caused by ischemia, radiation, iron overload, carbon tetrachloride, and paracetamol [5, 11].

In intrahepatic cholestasis in pregnant women, the use of silymarin can reduce the severity of skin itching and improve the indicators of the hepatic complex [1, 14].

The physiological natural effect of silymarin on the human body and its high effectiveness due to the combination of a pronounced hepatoprotective effect and a good safety profile served as the basis for our clinical observation.

The drug is well tolerated by patients. The following side effects are rarely observed: from the gastrointestinal tract: dyspeptic phenomena, sometimes skin allergic reactions are possible - itching, rash, alopecia.

Women with hormonal disorders (endometriosis, uterine fibroids, carcinoma of the breast, ovaries and uterus, carcinoma of the prostate gland) due to the possible manifestation of an estrogen-like effect should use drugs containing milk thistle with caution.

Findings

Thus, in the complex of drugs for the treatment requiring the use of hepatoprotectors, silymarin is an effective means to improve the clinical course of acute or chronic viral, toxic and medicinal liver diseases. When using daily prophylactic and therapeutic doses of the drug, depending on the patient's condition, it is necessary to consult a doctor not only with a hepatologist, but also with a gynecologist, taking into account the side effects of the drug. of the main group with the use of the drug Carsil contributed to faster stabilization and resolution of the clinical manifestations of the disease.

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