SERTOCHOL

TRADE NAME
Sertochoł

INTERNATIONAL NON-PROPRIETARY NAME
Ursodeoxycholic acid

PHARMACEUTICAL FORM
Hard gelatin capsules. 
Description: hard gelatin capsules, size 0, opaque, with pink body and scarlet red cap, contain white or almost white powder.

COMPOSITION
Each capsule contains
Active ingredient: ursodeoxycholic acid 300 mg.
Excipients: maize starch, silica colloidal anhydrous, magnesium stearate.
Capsule shell composition: gelatin, titanium dioxide, iron oxide red.

ATC CODE OF THE DRUG
A05AA02

PHARMACOTHERAPEUTIC GROUP
Hepatoprotector.
Cholalogleues and bile acid preparations.
Other hypolipidemic agents.

PHARMACOLOGICAL PROPERTIES

PHARMACODYNAMICS
Ursodeoxycholic acid produces direct cytoprotective membrane-stabilizing effect on hepatocytes, cholangiocytes and epitheliocytes of the gastrointestinal tract. The drug forms double molecules that interact with lipophilic membrane structures, embed into cell membranes and stabilize them. It protects liver and bile duct cells against damaging factors, and makes them resistant to the action of cytotoxic micelles.

The drug possesses immune-modulating activity, decreases expression of immune-pathologic reactions in liver due to reduction of expression of HLA-1 histocompatibility antigens on hepatocytes and HLA-2 on bile duct cells, as well as due to suppression of immunoglobulin activity (predominantly of IgM). It decreases formation of cytotoxic T-lymphocytes.

Stimulating exocytosis in hepatocytes by way of activation of Ca^{2+}-dependent α-proteinkinase in cholestatic condition, ursodeoxycholic acid decreases concentration of bile acids toxic for hepatocytes, and induces choleresis with high content of bicarbonates, which leads to an increase in bile passage.

Reducing cholesterol synthesis in liver, as well as its intestinal absorption, ursodeoxycholic acid decreases lithogenicity of bile, lowers cholate-cholesterol index, promotes dissolution of cholesterol concrements and prevents formation of new ones.

Effective dissolution of gallstones requires that these are purely cholesterol ones, their size must not exceed 15-20 mm, and the gall bladder (filled with stones not more than in half) and bile ducts preserve their function in full.

Ursodeoxycholic acid reliably inhibits fibrosis progress in patients with primary biliary cirrhosis, mucoviscidosis and alcoholic steatohepatitis. It decreases the risk of esophageal varices development.

The drug regulates apoptosis processes (ageing and death of cells) impaired due to pathology of liver and other organs. Administration of ursodeoxycholic acid inhibits growth of colon cancer cells.
PHARMACOKINETICS
After ingestion of the drug ursodeoxycholic acid absorbs in the intestine by way of passive diffusion, and in the ileum by way of active transport. Peak plasma concentration is reached within 30-60 minutes after ingestion.
In regular administration of the drug ursodeoxycholic acid becomes the major bile acid in plasma, comprising about 48% of the total bile acids content in blood. Its plasma protein binding is 96-99%. The therapeutic effect of the drug depends mainly on concentration of ursodeoxycholic acid in bile, but not in plasma. Peak bile concentration of ursodeoxycholic acid is reached with daily dose of the drug of 10-14 mg/kg of body weight. Further increase of the dose does not result in elevation of bile concentration of ursodeoxycholic acid. Ursodeoxycholic acid crosses the placental barrier.

THERAPEUTIC INDICATIONS
- dissolution of cholesterol gallstones. Cholesterol stones must not look like dark spots on the roentgenogram and must not exceed 15 mm in diameter. In spite of the presence of stones, gall bladder function must not be impaired;
- treatment of gastritis with bile reflux;
- symptomatic treatment of primary biliary cirrhosis (PBC) in the absence of signs of decompensation.

DOSEAGE AND ADMINISTRATION
Sertochol is administered per os once daily before bedtime or twice daily.
The capsule is swallowed whole, without chewing, followed with sufficient amount of water (possibly with food or a snack).
In cholelithiasis: the treatment course is continuous and prolonged (from several months to 2 years); the daily dose is 10-15 mg/kg of body weight. The whole daily dose is administered before bedtime. Treatment is continued until complete dissolution of the stones and 3 months after for prevention of lithiasis relapses. If gallstones do not decrease in size within 12 months from the beginning of treatment, administration of the drug is considered unreasonable. For prevention of recurrent lithiasis after cholecystectomy the dose of the drug is 300 mg twice daily for several months (3 months on an average).
In gastritis with bile reflux the dose of 300 mg of the drug is administered before bedtime. Treatment course is from 10-14 days to 6 months (up to 2 years, if necessary).
In other cases the dose is determined in an amount of 10-15 mg/kg (up to 20 mg/kg, if necessary) of body weight daily, divided into 2-3 separate doses; the drug is administered from 6 months to several years. For children over 6 years old (with body weight of more than 20 kg) the dosage is individually determined in an amount of 10-20 mg/kg of body weight daily.

CONTRAINICATIONS
- hypersensitivity to the active ingredient or to other ingredients of the drug;
- roentgen-positive (with high content of calcium) gallstones;
- non-functioning gall bladder;
- acute inflammatory diseases of gall bladder, bile ducts and intestine;
- decompensated liver cirrhosis;
- acute hepatic and/or renal failure;
- pancreatitis;
- first trimester of pregnancy;
- children under 6 years old.

SIDE EFFECTS
Gastrointestinal tract disorders:
Clinical studies reports of pasty stools and diarrhoea are numerous.
Very rarely severe pain in the right part of the abdomen was reported during treatment of primary biliary cirrhosis.
Hepatobiliary disorders:
Very rarely calcification of gallstones may develop during treatment with ursodeoxycholic acid.
Very rarely during treatment of advanced primary biliary cirrhosis decompensation of liver cirrhosis developed and disappeared after withdrawal of the drug.
Hypersensitivity reactions:
In very rare cases allergic rash (urticaria) may appear.
**SPECIAL INDICATIONS**

**Sertochol** should be taken under medical supervision. During the first 3 months of treatment, liver function parameters AST (SGOT), ALT (SGPT) and γ-GT should be monitored by the physician every 4 weeks, thereafter every 3 months.

*When used for dissolution of cholesterol gallstones:*

In order to assess therapeutic progress and for timely detection of any calcification of the gallstones, depending on stone size, the gall bladder should be visualised (oral cholecystography) with overview and occlusion views in standing and supine positions (ultrasound control) 6-10 months after the beginning of treatment.

If the gall bladder cannot be visualised on X-ray images, or in cases of calcified gallstones, impaired contractility of the gall bladder or frequent episodes of biliary colic, **Sertochol** should not be used.

**INFLUENCE ON ABILITY TO DRIVE AND OPERATE OTHER MECHANISMS**

**Sertochol** does not influence the ability to drive and to perform activities requiring high speed of psychomotor action.

**PREGNANCY AND LACTATION**

The drug is contraindicated in the 1st trimester of pregnancy. Administration of the drug in the 2nd and 3rd trimesters is possible only in cases when the benefit for the mother outweighs potential risk for the fetus (no adequate and well-controlled studies of ursodeoxycholic acid administration in pregnant women have been performed).

There are no data on release of ursodeoxycholic acid into breast milk. If treatment with the drug in the period of lactation is necessary, the issue of weaning must be considered.

**PEDIATRIC USE**

Since **Sertochol** is produced in the form of 300 mg capsules, the drug is not used in children under 6 years old (with body weight of less than 20 kg).

**DRUG INTERACTIONS**

Antacids containing aluminium ions and ion exchange resins (colestyramine) decrease absorption of the drug. Should the use of a preparation containing one of these substances be necessary, it must be taken at least 2 hours before or after **Sertochol** capsules.

**Sertochol** can increase the absorption of cyclosporine from the intestine.

Blood concentration of cyclosporine in patients treated with it must be controlled by the physician, and the dose of cyclosporine should be adjusted.

In isolated cases **Sertochol** can reduce the absorption of ciprofloxacin.

Hypolipidemic agents (especially clofibrate), oestrogens, neomycin or progestins increase saturation of bile with cholesterol and may decrease the ability of the drug to dissolve gallstones.

**OVERDOSE**

No reports of overdose are available.

**PACKAGING**

Hard gelatin capsules.

10 capsules in a blister.

2 blisters together with an enclosed leaflet in a carton box.

**STORAGE CONDITIONS**

Store at temperature not exceeding 25°C.

Keep out of reach of children!

**SHELF LIFE**

3 years from the date of manufacture.

Do not apply after the expiry date.

**SALES TERMS**

Sold under prescription.
MANUFACTURER
The holder of trade mark and marketing authorization is
“DR SERTUS İLAÇ SANAYİ VE TİCARET LİMİTED ŞİRKETİ”, TURKEY.
Manufactured by
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