E. Liver Diseases

- The liver is the second largest organ in the body (after the skin) and is located in the upper right-hand side of the abdomen.

- Its important bodily functions include processing nutrients, manufacturing bile to help digest fats, synthesizing proteins, producing glucose (gluconeogenesis), regulating blood clotting, and filtering toxins from the blood.

- Liver disorders are categorized by the cause, such as infection, exposure to certain drugs or toxins, an autoimmune process, or a genetic defect. These causes may lead to fatty liver disease, cirrhosis, or hepatitis.

Liver Diseases

- Hepatitis is an inflammation of the liver, involving alteration of hepatocytes, either degenerative or necrotic. The most common is viral hepatitis. (Hepatitis A,B,C virus).
- Hepatitis can also be caused by alcohol or drugs.

- Cirrhosis is a chronic disease of the liver characterized by nodular regeneration of hepatocytes.

Liver Diseases

Most Liver remedies were introduced into therapeutic use because they were found to have protective properties in certain animal species. The experimental agent (drug substance) was administered to the laboratory animal for a specified period of time, then a hepatotoxic agents (carbon tetrachloride, galactosamine, phalloidin) were administered.

These are not valid models for studying liver diseases in humans.

More useful indicator is the finding that certain agents promote hepatic regeneration.

Hepato-protective remedies which help to reduce the damage caused from hepatic stressors and diseases.

Liver Diseases

Silybum marianum, Milk thistle,

Firstly,

Silymarin (main component of milk thistle) is poorly soluble in water, so it is typically administered as an encapsulated extract and not as a ‘tea’. Milk thistle extracts are usually standardized to contain 70-80% silymarin. This is the most important hepato-protective plant in the world. Therefore it is need to be remembered shortly.

Silybum marianum, is an annual to biennial plant of the family Asteracea growing to 2 m.

It is native principally to southern Europe and northern Africa and grows in warm, dry locales. It is cultivated for medicinal purposes mainly in northern Africa and south America.

The crude drug consists of the ripe fruits.

Liver Diseases

Silybum marianum, Milk thistle,

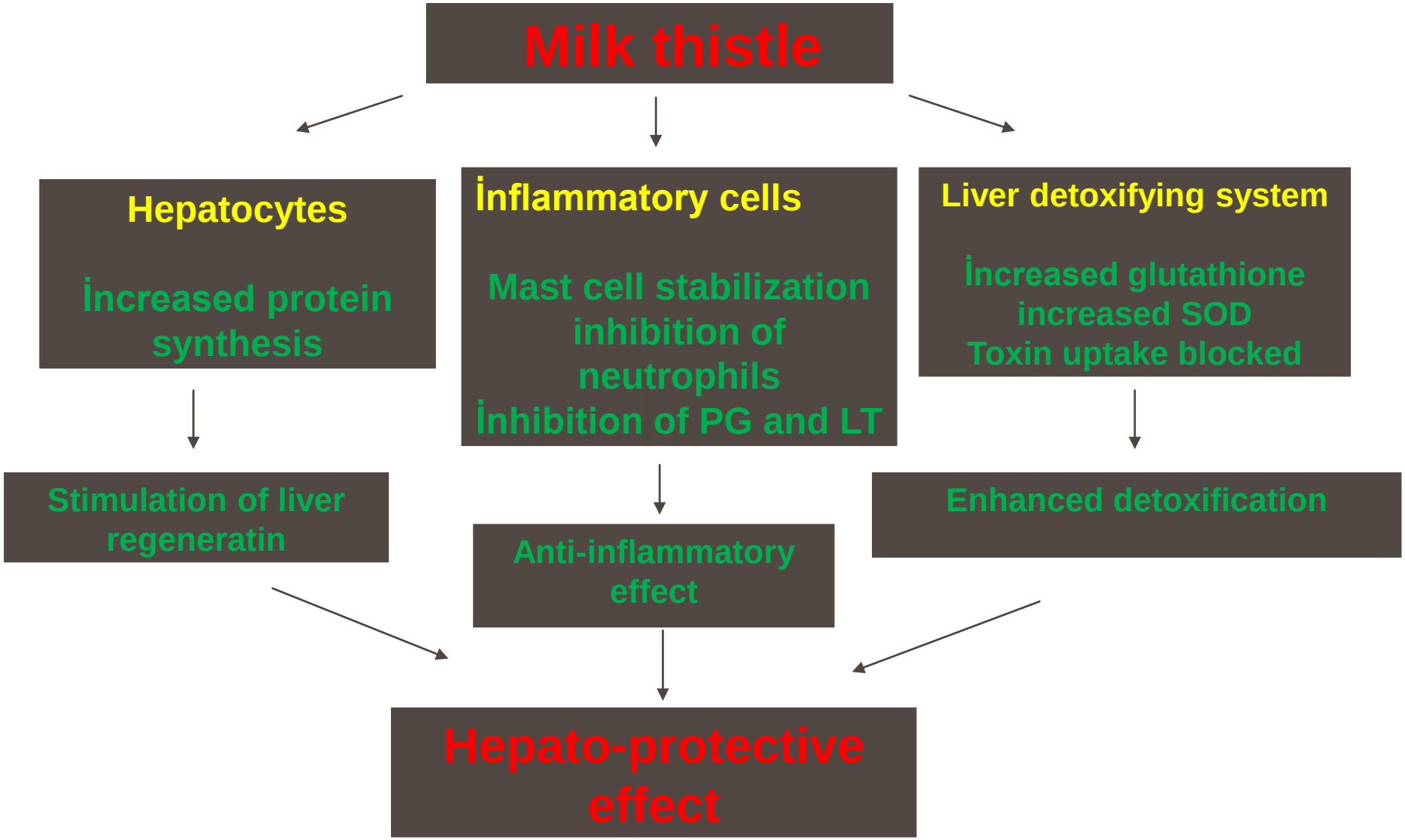
Milk thistle contains silymarine, silybinin, silydianin, and silychristin.

It also contains taxifolin and flavonoids.

Silymarin is the most biologically active and the most abundant. İt is found in highest concentrations in the fruit, but it is also found leaves and seeds.

Liver Diseases

Silybum marianum, Milk thistle,



Adverse effects/contraindications

Silybum marianum, Milk thistle,

Availible evidence suggests that milk thistle is associated with few, and generally minör, adverse effects (gastrointestinal problems, e.g. diarrhea, flatulence, abdominal bloating)

For amanita poisoning silymarin is given by infusion. For such use the dose is 20 mg silybinin per kg body weight over a 24-h period, divided into 4 infusions, each administered over a 2-h period.

Liver Diseases
Phyllanthus amarus, Black catnip

Black catnip herb is the aerial part of *Phyllanthus amarus*, an Indian herb which also grows in Africa, America and other Asiatic regions.

It contains tannins, flavonoids, lignans including extremely bitter compound phyllanthin (0.8%) and hypophyllanthin..

An aqueous extract of the plant inhibits woodchuch hepatitis virus DNA poymerase and surface antigen expression.

No health hazards are known in conjunctions with the proper administration of designated therapeutic dosages.

The drug can be given as decoction, however, no xact doses are known.

Liver Diseases
Glycyrrhiza glabra, Liquorice

Liquorice is the dried roots and rhizome of *Glycyrrhiza glabra* L. (Fam. *Fabaceae*)

A group of saponins and related to glycyrrhizin and lectins from liquorice has been used for over 20 years to treat chronic viral hepatitis in Japan.

Standardized aqueous extract administered parenterally for 2 weeks at a daily dose of 80 mg can normalize aspartate transaminase and alanine transaminase in over 60% of patients with chronic hepatitis.

According to Commission E, the maximum recommended dose of glycyrrhizin is 100 mg/day. Because of its aldosterone-like activities, use of the drugs requires caution and monitoring for hypertension.

Its compunds are soluble in water, therefore infusions and decoctions of the drug can be prepared as tea.

Liver Diseases
Cynara scolymus, Artichoke

Artichoke consists of the fresh or dried leaves of *Cynara scolymus L.*

The drug contains caffeic acid derivatives, flavonoids, and sesquiterpene lactones.

Clinical studies have demostrated that artichoke leaf extract causes an increase of bile secretion into the duodenum.

German Commission E cites dyspeptic complaints as indication for artichoke leaf preparations (tincture, tea and other forms) and recommends a Daily döşe of 6 g crude drug.

It is well tolerated and has few side effects.

Liver Diseases
Peumus boldus, Boldo

Boldo consists of the dried leaves of *Peumus boldus* Mol.

It is a small tree and native to Chile.

The drug contains abour 2% volatile oil composed of monoterpenoids, flavonoids and alkaloids (0.2-0.5%) including boldine.

Boldine is the component responsible for the choleretic activity of boldo: it increases the biliary secretion in anesthetized rats. Boldo extracts also inhibit lipid peroxidation in rat hepatocyte culture and protect hepatocytes against damage by different factors.

Boldo is taken as a tea prepared with 2-3 g drug in 150 ml water.

The drug is contraindicated in cases of obstruction of the biliary tract and lithiasis. The administration of boldo is contraindicated in patients who have gallstones.

Liver Diseases
Taraxacum officinale, Dandelion

Dandelion is the dried root (and leaves) of Taraxacum officinale (Fam. Asteraceae), a perennial herb native to Europe.

Dandelion contains triterpenoids (e.g. Taraxacin and taraxerol), chlorogenic and caffeic acids, inulin, vitamins, minerals, phytosterols, flavonoid glycosides.

Dandelion roots has been used in the management of liver and digestive disorders.

The drug is employed in the form of infusion or decoction (3-5 g dried root in 150 ml water) three times daily and of tincture three times daily.