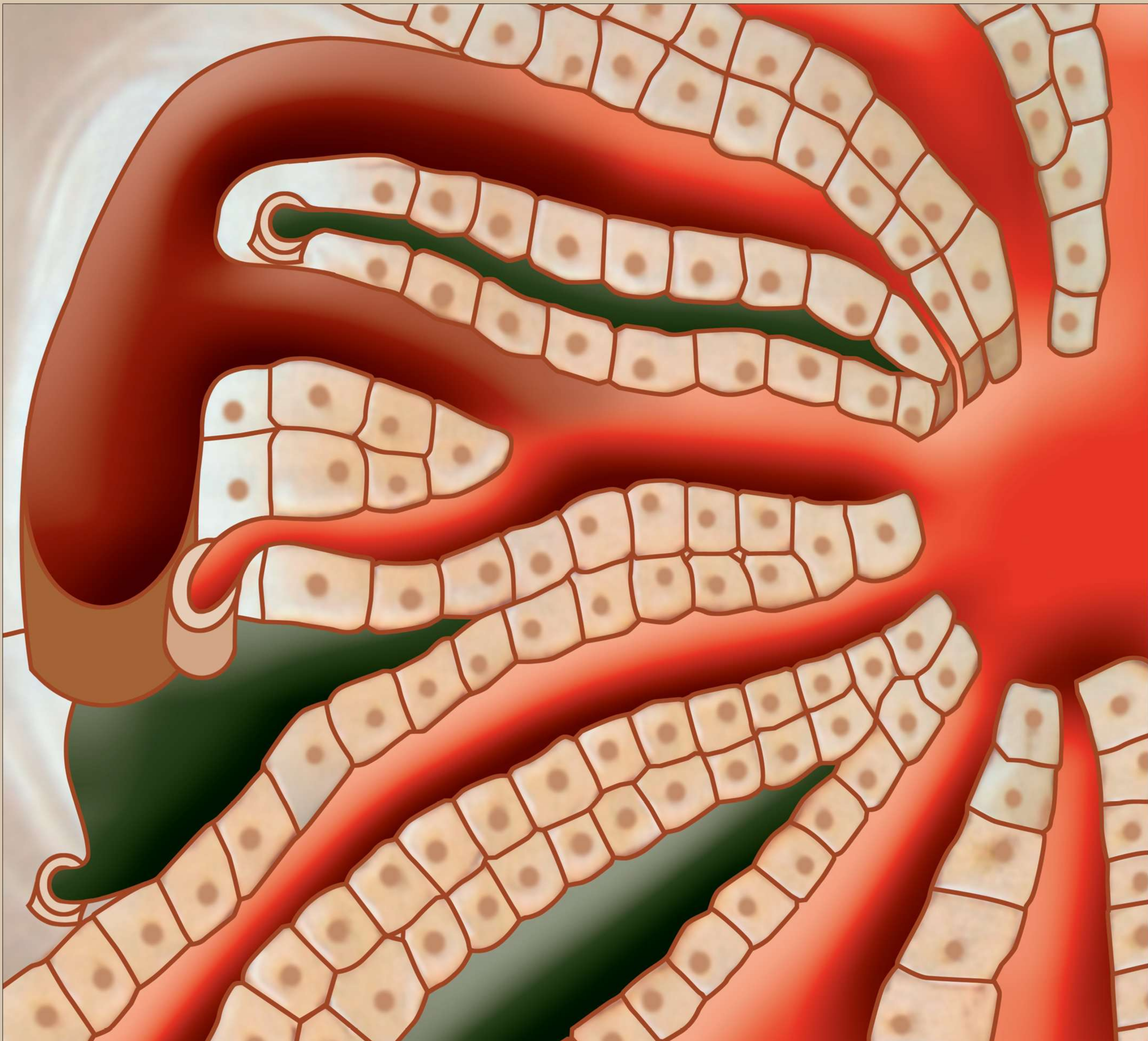


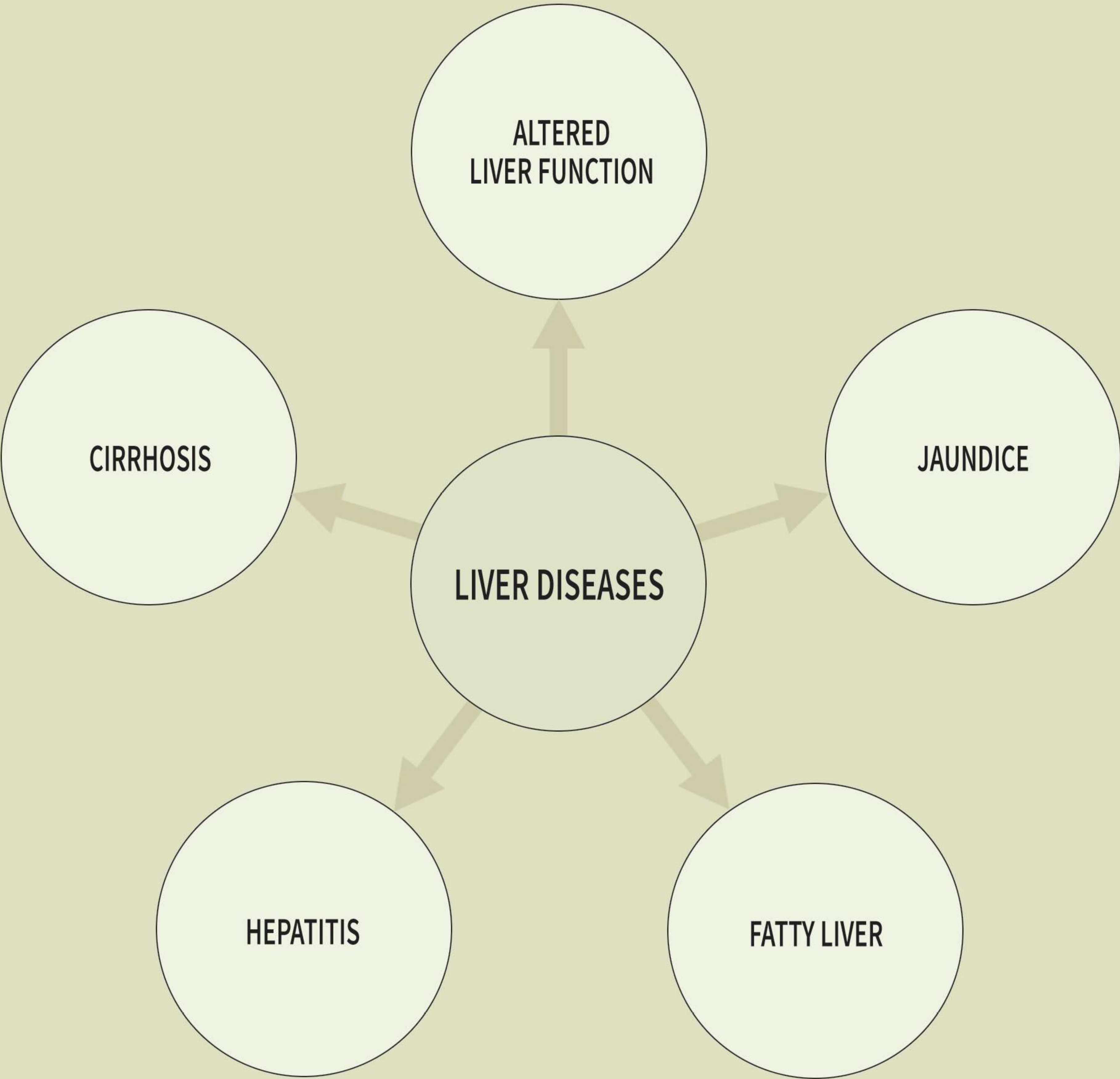


amaraalayaTM
Susrusha Pharma

Regenerates you from degeneration



Curative effect of ‘amaraalaya ’ on various liver diseases.



Regenerates you from degeneration

SPONTANEOUS BACTERIAL PERITONITIS (SBP) AND CIRRHOSIS

In cirrhosis, the fluid that collects in the abdomen is unable to resist infection normally. In addition, more bacteria find their way from the intestine into the ascites. Therefore, infection within the abdomen and the ascites, referred to as spontaneous bacterial peritonitis or SBP, is likely to occur.

Symptoms

Some patients with SBP have no symptoms, while others have fever, chills, abdominal pain and tenderness, diarrhea, and worsening ascites.

HEPATIC ENCEPHALOPATHY AND CIRRHOSIS

Hepatic encephalopathy is characterized by neuropsychiatric manifestation ranging from a slightly altered mental status to coma, and neuromuscular symptoms.

Pathogenesis

1. The causative metabolic toxins (usually nitrogenous substance) most likely originate in the intestine.
2. Because of portal-systemic shunts, these toxic substances bypass the liver, where they normally are metabolized.
3. After bypassing the liver, these toxic substances cross the blood-brain barrier and exert direct or indirect neurotoxin effects on the central nervous system.

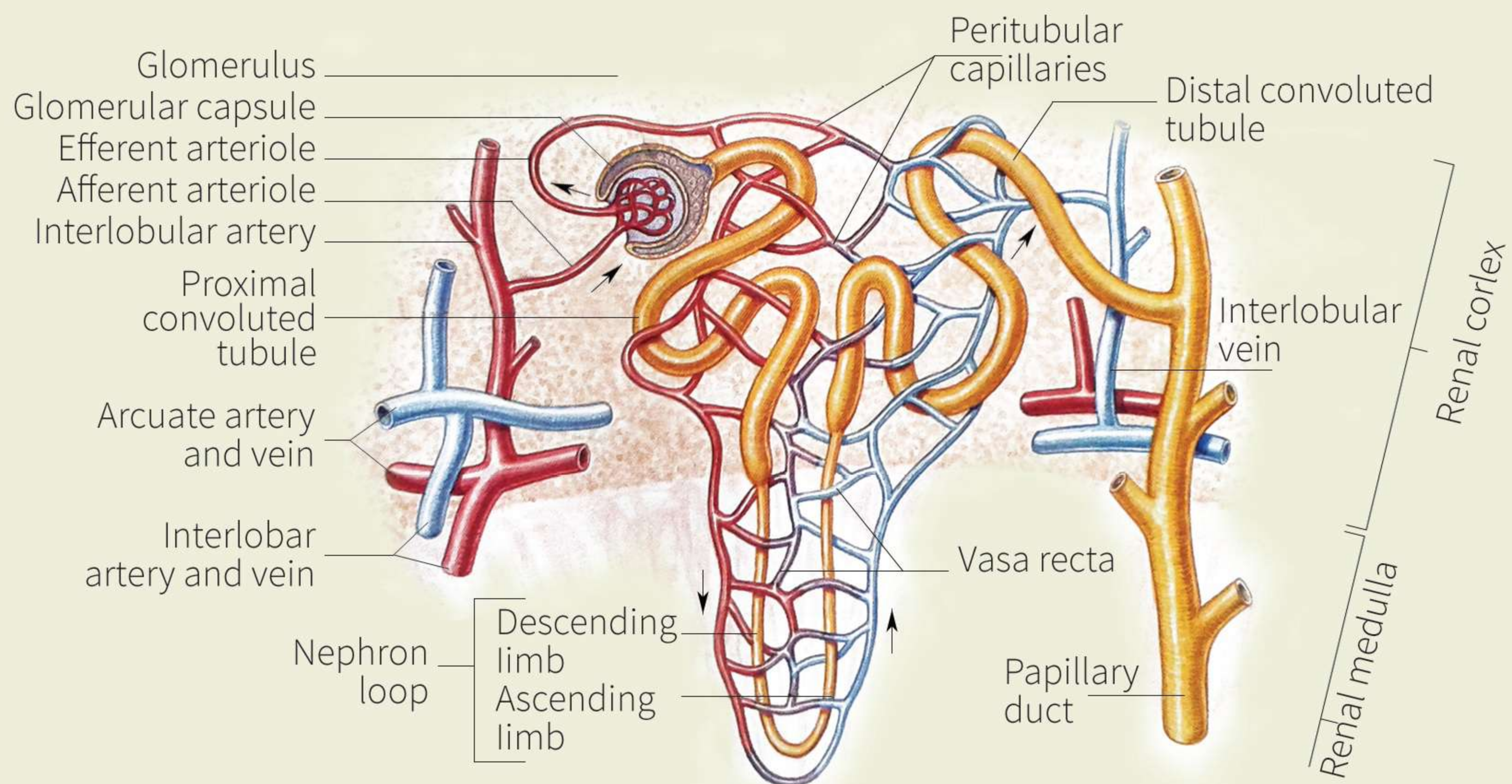
Thereby

amaraalaya

- ◆ Restricts the entry of toxin from the intestines cross the blood-brain barrier at the level of endothelial cells that line the capillaries in the brain.
- ◆ Maintains the plasma amino acid composition. This leads to reduction of "false" neurotransmitters in the brain.
- ◆ Decreases the neuroinhibitory substance, manganese, monoamines, or endogenous opiates. Nondigestible disaccharides may involve bacteriostatic effects, cathartic effects, or enhancement of conversion of ammonia to ammonium with excess hydrogen on. Presumably, ammonium is then excreted into the feces and eliminated.
- ◆ Lowers serum ammonia levels through stimulation of the urea cycle and urea formation. Reduce serum ammonia levels by increasing ammonia excretion in urine.

Diet

- ◆ Limit the protein in the diet of patients with frequent recurrence of hepatic encephalopathy.
- ◆ Vegetable proteins may be superior to meat protein, and the fiber content in diet to be beneficial.



PATHOGENESIS

Renal vasoconstriction leads to decrease the renal perfusion and **GFR** (glomerular Filtration Rate).

Hepato renal syndrome (**HRS**) is related to marked over activity of **RAAS, SNS, ADH** and other endogenous vasoconstrictor (i.e. endothelin) – that overcomes the renal production of vasodilatory substances **PG E2**, prostacyclin, nitric oxide and natriuretic peptides.

amaraalaya thereby **maintains the proper equilibrium** between vasoconstrictors and renal vasodilators.

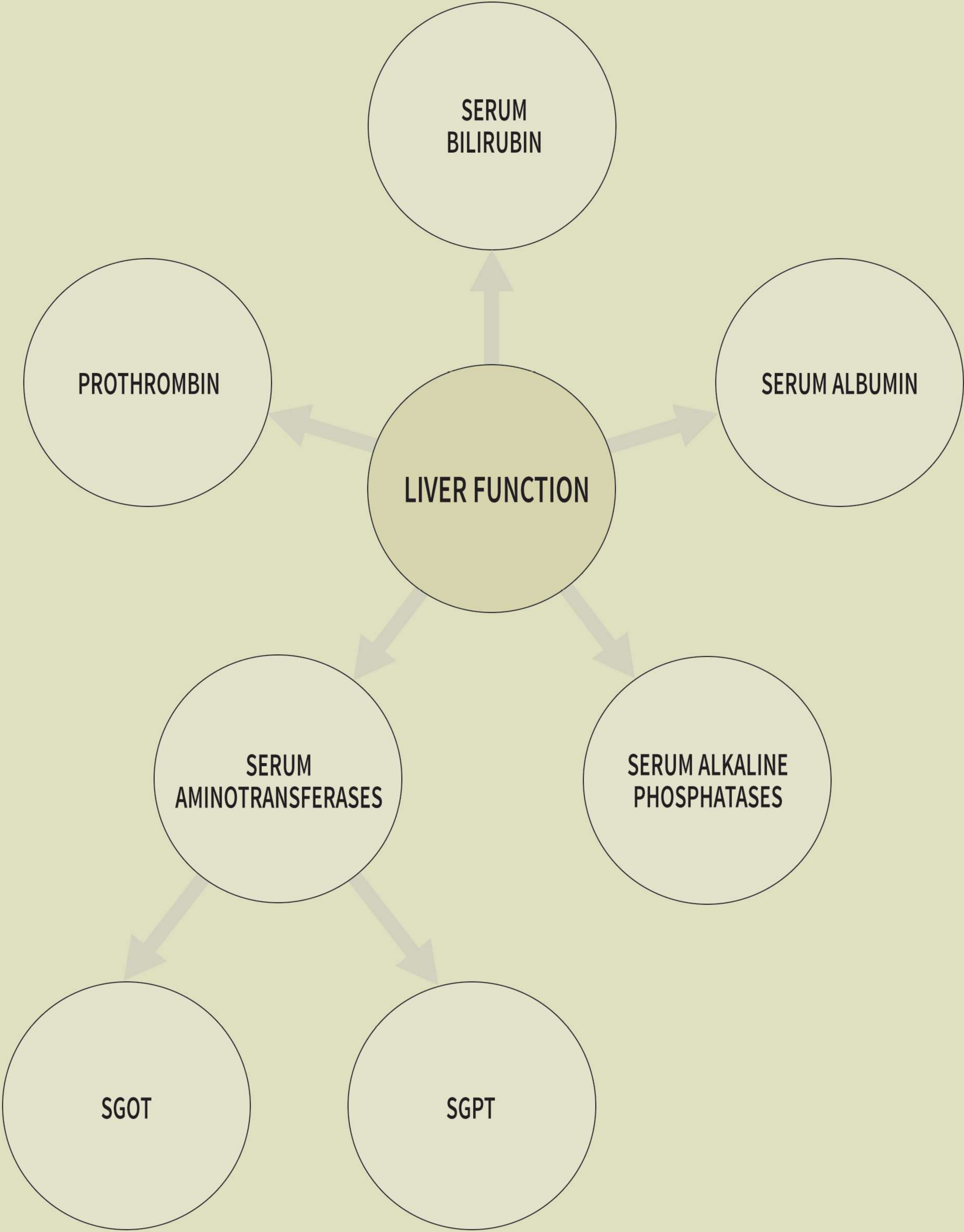
Renal hypoperfusion and decreased GFR is corrected by increased renal synthesis of vasodilators that may lead to decrease the intrarenal synthesis of vasoconstrictors thereby promoting the renal output evidenced by the increased urine volume.

Thereby amaraalaya

- ◆ Restricts the development of ascites by reducing the hepatic venous pressure gradient below 12 mm Hg.
- ◆ May directly involve the reduction in the production of angiotensin, **ADH** and catecholamine by acting on intrahepatic vascular and stellate cells thereby decrease the intrahepatic vascular resistance and portal pressure.
- ◆ amaraalaya reduces the ascites within a period of one month and completely normalize the hepatic circulation which is evidenced by the reduction in the size of hepatic portal vein.

Diet

- ◆ Advised to take two egg whites per day to increase the blood albumin level thereby to avoid the fluid escape from the vascular channels to interstitial space and peritoneal cavity.
- ◆ Advocate the patients to restrict high sodium intake to avoid excess sodium retention in the nephron.
- ◆ Request them to avoid certain fruits (tender coconut, banana, grapes, oranges, pineapples and etc) having high potassium content to control the complications like vomiting.



JAUNDICE

Bilirubin is formed from haemoglobin (the oxygen-carrying pigment in red blood cells) when old red cells are broken down, mainly by the spleen. The pigment is absorbed from the blood by the liver, where it is made soluble in water and is excreted in bile. This process can be upset in any of the main types of jaundice: **haemolytic, hepatocellular and obstructive.**

Haemolytic Jaundice - the amount of bilirubin produced is too great for the liver to process. This is caused by excessive haemolysis (breakdown old red cells).

Hepatocellular jaundice, bilirubin builds up in the blood because its transfer from liver cells to bile is prevented.

Obstructive jaundice, also known as cholestatic jaundice, bile is prevented from flowing out of the liver because of blockage of the bile ducts. As a result, cholestasis (stagnation of bile in the liver) occurs and bilirubin is forced back into the blood.

Liver function tests.

Serum bilirubin.

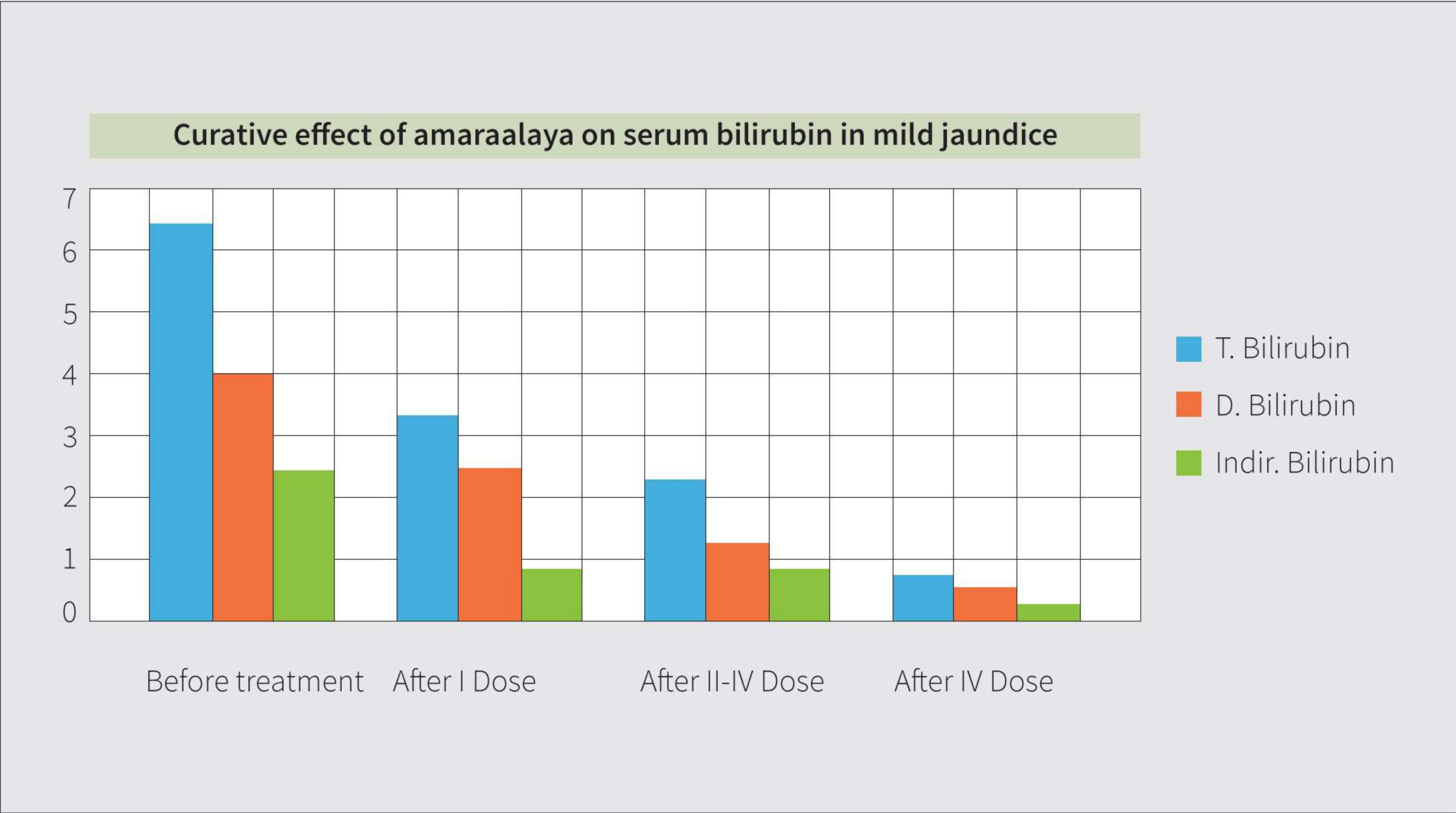
A high bilirubin level in the blood may indicate defective processing of bile by the liver or obstruction to bile flow.

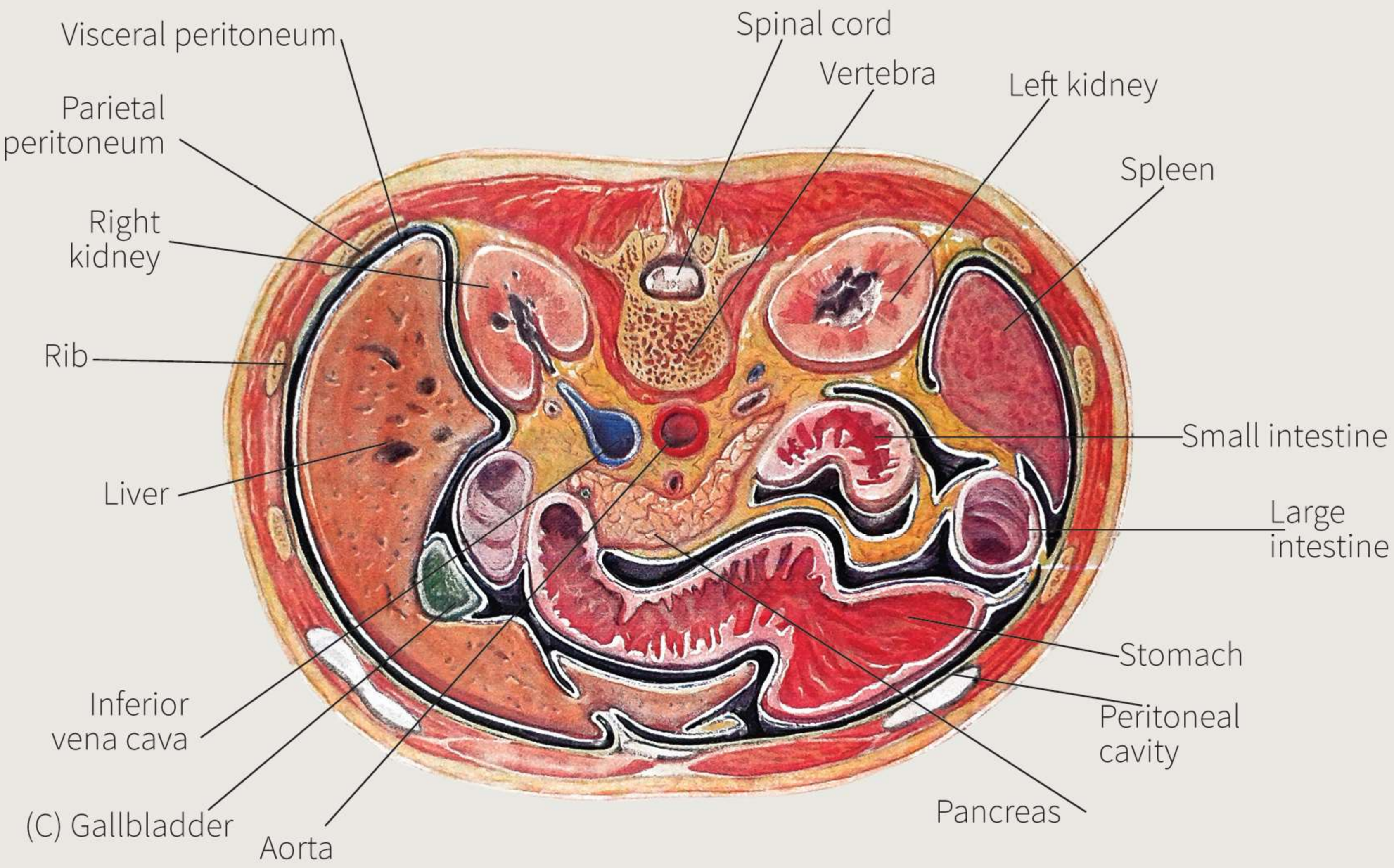
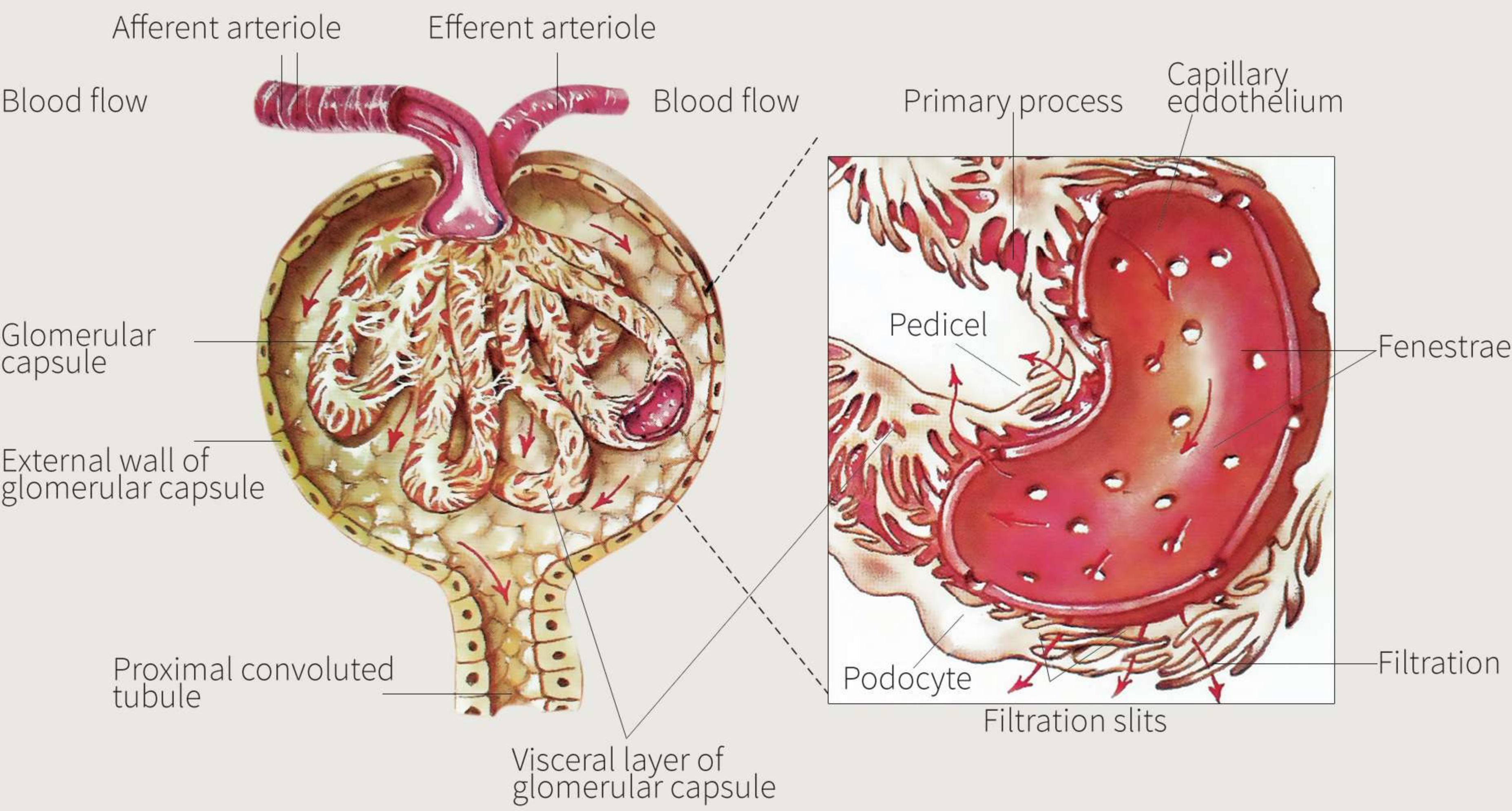
Albumin is one of the main proteins in blood. Made by the liver, one of its actions is to hold fluid inside the blood vessels. A low level is found in many chronic liver disorders and is often associated with ascites and ankle oedema (fluid collection in the abdomen and around the ankles)

Alkaline phosphatase is an enzyme found in bile. The blood level of this enzyme rises when there is obstruction to the flow of bile (cholestasis).

Aminotransferases are enzymes released from liver cells into the blood when the liver cells are damaged. The levels will be raised in acute and chronic hepatitis.

Prothrombin time: A normal result in this test of blood clotting depends on the presence in the blood of a protein made by the liver from a fat-soluble vitamin, **Vitamin K**. The test result can be **abnormal in two kinds of disorders** when the **proteins not made** because of liver cell damage and when there is a **blockage to bile flow** in the liver, causing a lack of bile in the intestines (which interferes with fat and vitamin K absorption).





There by
amaraalaya

- ◆ Restricts the development of portal hypertension by reducing the hepatic venous pressure gradient below 12 mm Hg.
- ◆ May directly establishes the relationship between blood and liver cells thereby allows the liver cells to remove and add substances to the blood.
- ◆ Keeps the smooth relationship between the liver cells and the channels through which bile flows thereby facilitate the bile flow.
- ◆ Amaraalaya erases scarring within the cirrhotic liver and enable the flow of blood through the liver and to the liver cells thereby reduces portal hypertension.

DIET

- ◆ Advised to take two egg whites per day to increase the blood albumin level thereby to avoid the fluid escape from the vascular channels to interstitial space and peritoneal cavity.
- ◆ Advocate the patients to restrict high sodium intake to avoid excess sodium retention in the nephron.
- ◆ Request them to avoid certain fruits (tender coconut, banana, grapes, oranges, pineapples and etc) having high potassium content to control the complications like vomiting.

ASCITES & CIRRHOSIS

Ascites is a detectable collection of free fluid in the peritoneal cavity. Ascitic fluid is transparent and yellow amber in colour. **Two factors** are important in the formation of ascites: an **increased total body sodium and water**, and **increased sinusoidal portal pressure**.

Impairment of renal ability to excrete sodium is earliest renal dysfunction in cirrhosis. As the disease progresses patients became unable to excrete their regular sodium intake and develop sodium retention. Initial phases of sodium retention, urinary sodium excretion is moderately reduced. Sympathetic Nervous System (**SNS**) stimulates sodium reabsorption the proximal tubule, loop of Henle and distal and collecting tubules. Renin Angiotensin Aldosterone System (**RAAS**) stimulates sodium reabsorption in the distal nephron.

Therefore both the system plays an important role in the pathogenesis of sodium retention in cirrhosis.

Water retention

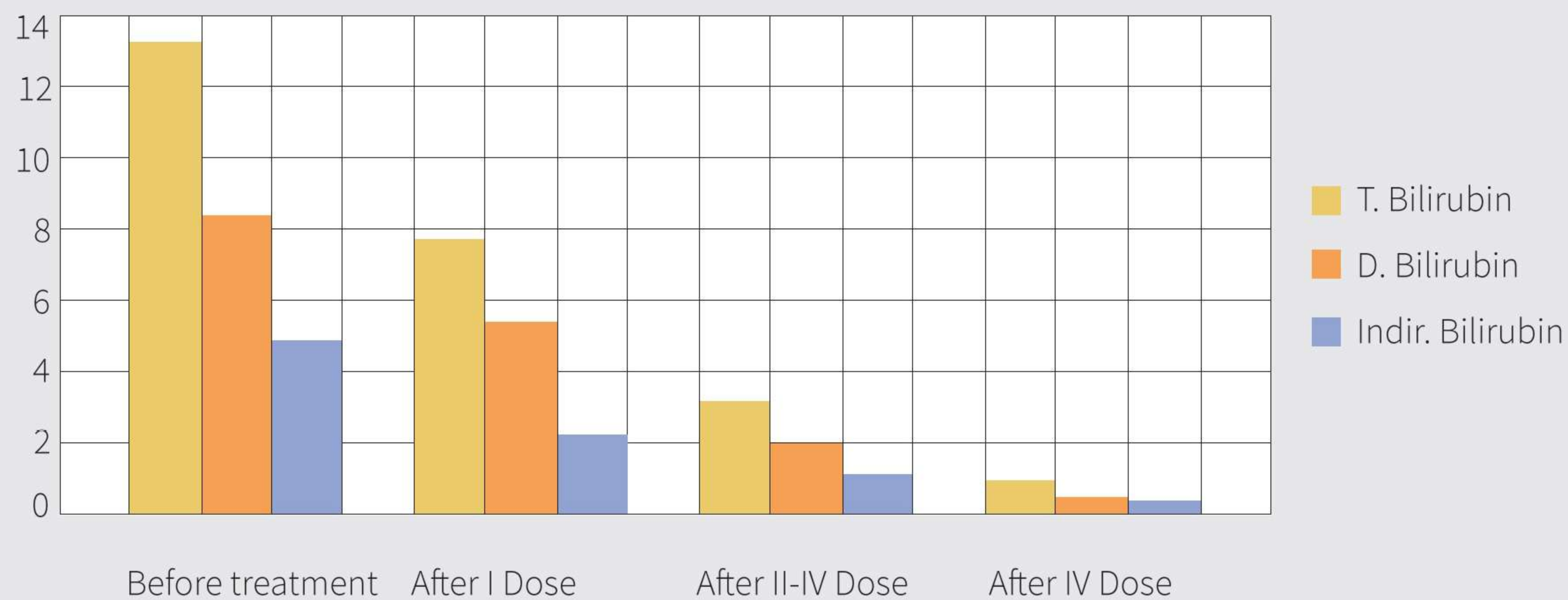
The kidney is continuously generating free water in the ascending limb of the loop of Henle by a mechanism consisting in an active reabsorption of sodium chloride without a concomitant reabsorption of water.

The final volume of free water excretion, therefore, depends on the amount of free water reabsorbed in the more distal segments of the nephron (the convoluted distal tubule and the collecting tubule).

Symptoms

In addition to abdominal swelling and discomfort, ascites may cause breathing difficulty due to pressure on, and immobilization of the diaphragm.

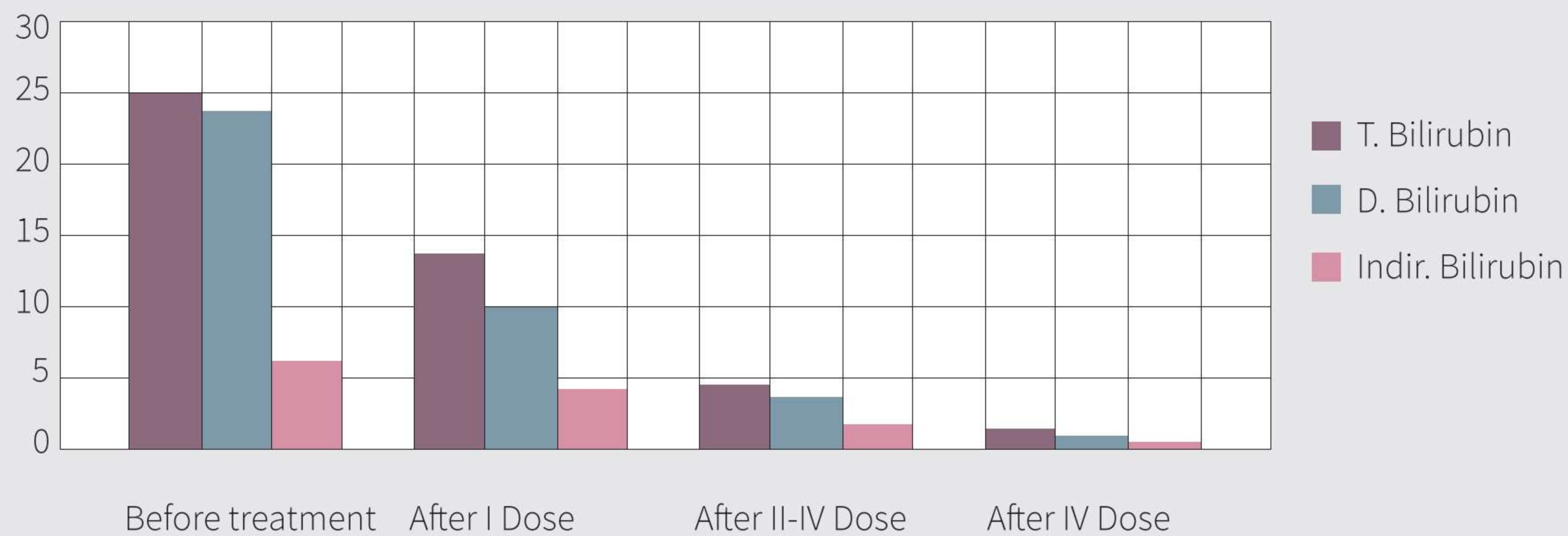
Curative effect of amaraalaya on serum bilirubin in moderate jaundice

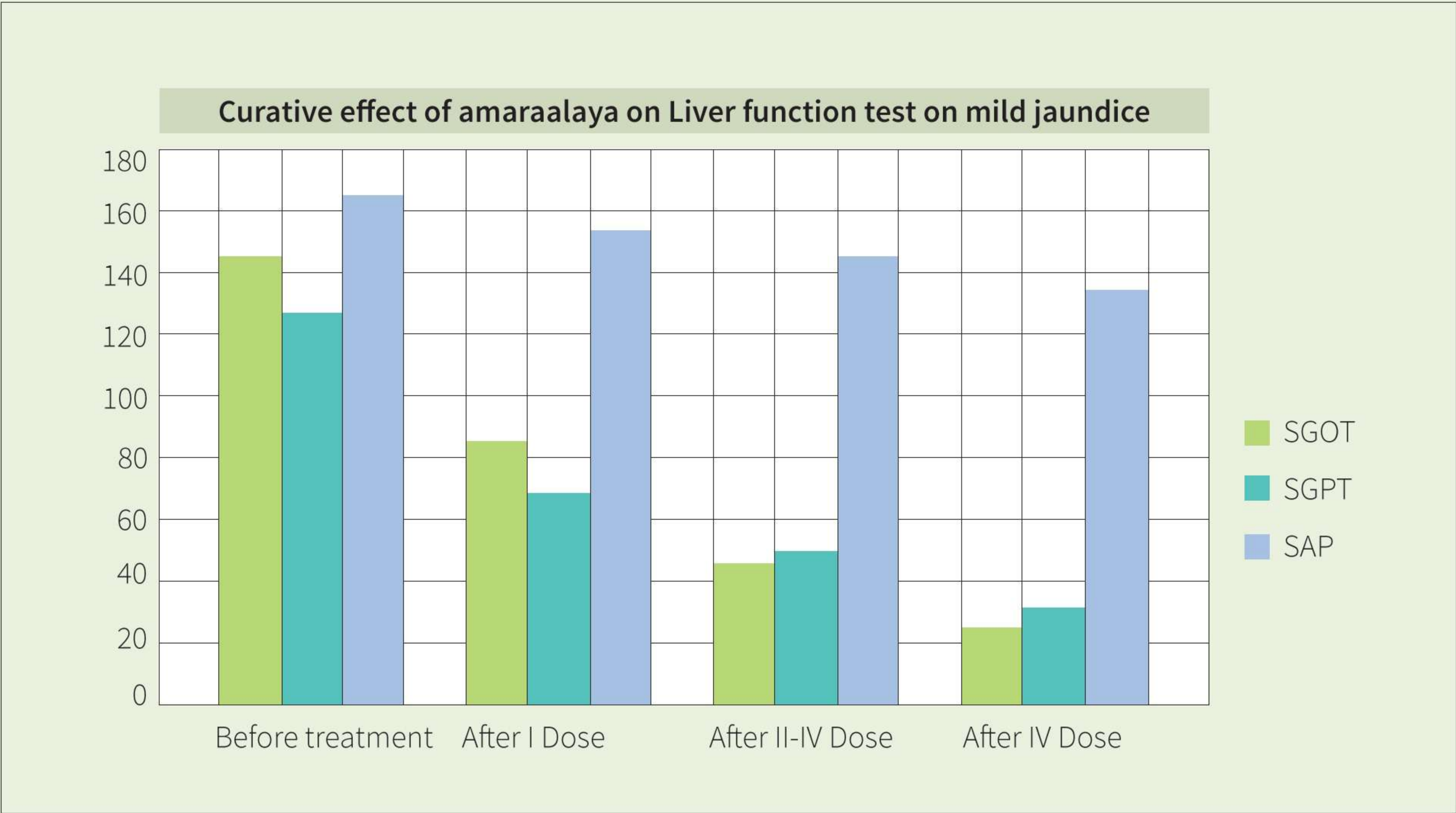


Thereby amaraalaya

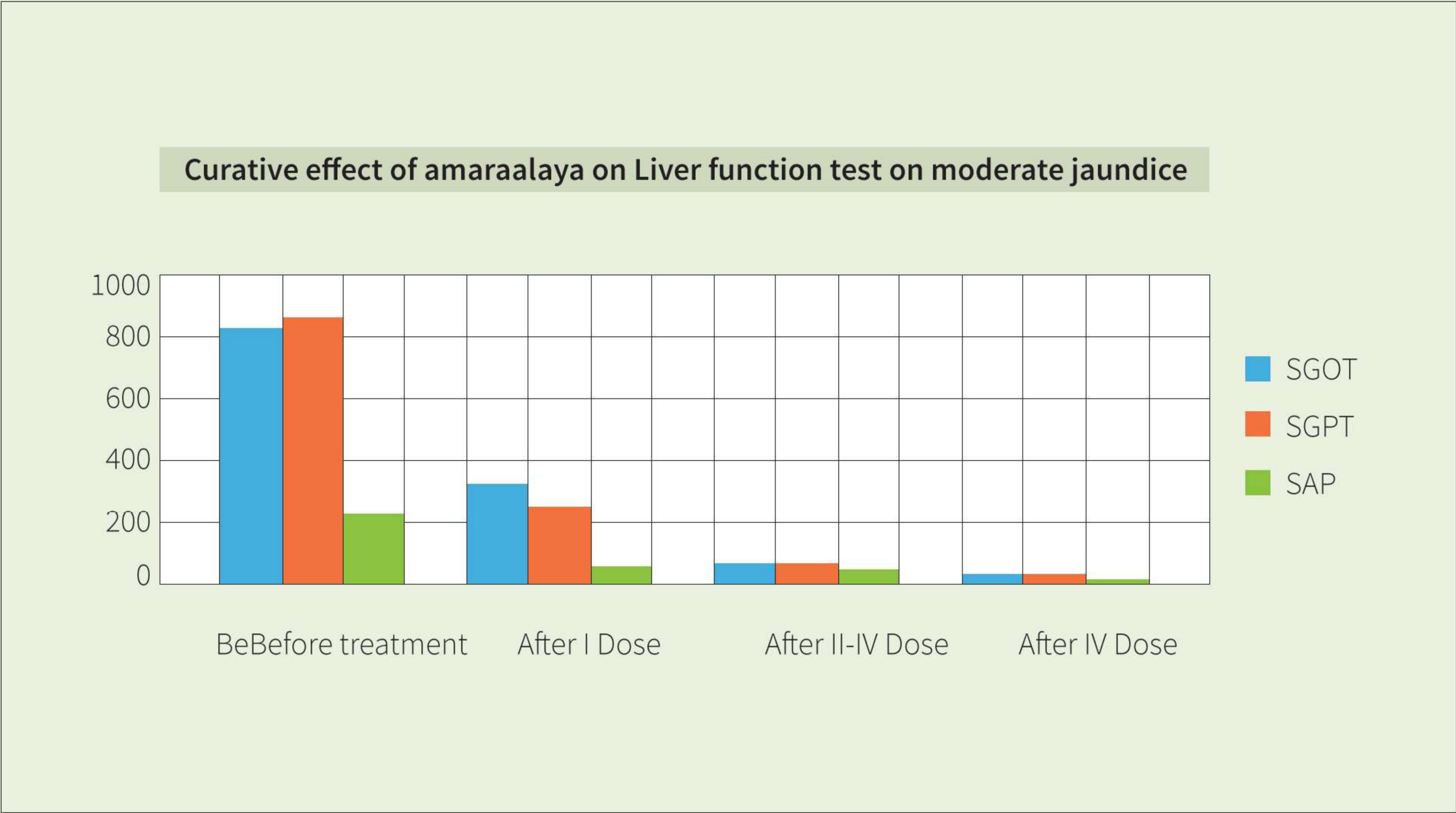
◆ Brings down the bilirubin level in the blood may indicate effective processing of bile by the liver. May directly establishes the relationship between blood and liver cells thereby allows the liver cells to remove and add substances to the blood.

Curative effect of amaraalaya on serum bilirubin in Severe jaundice

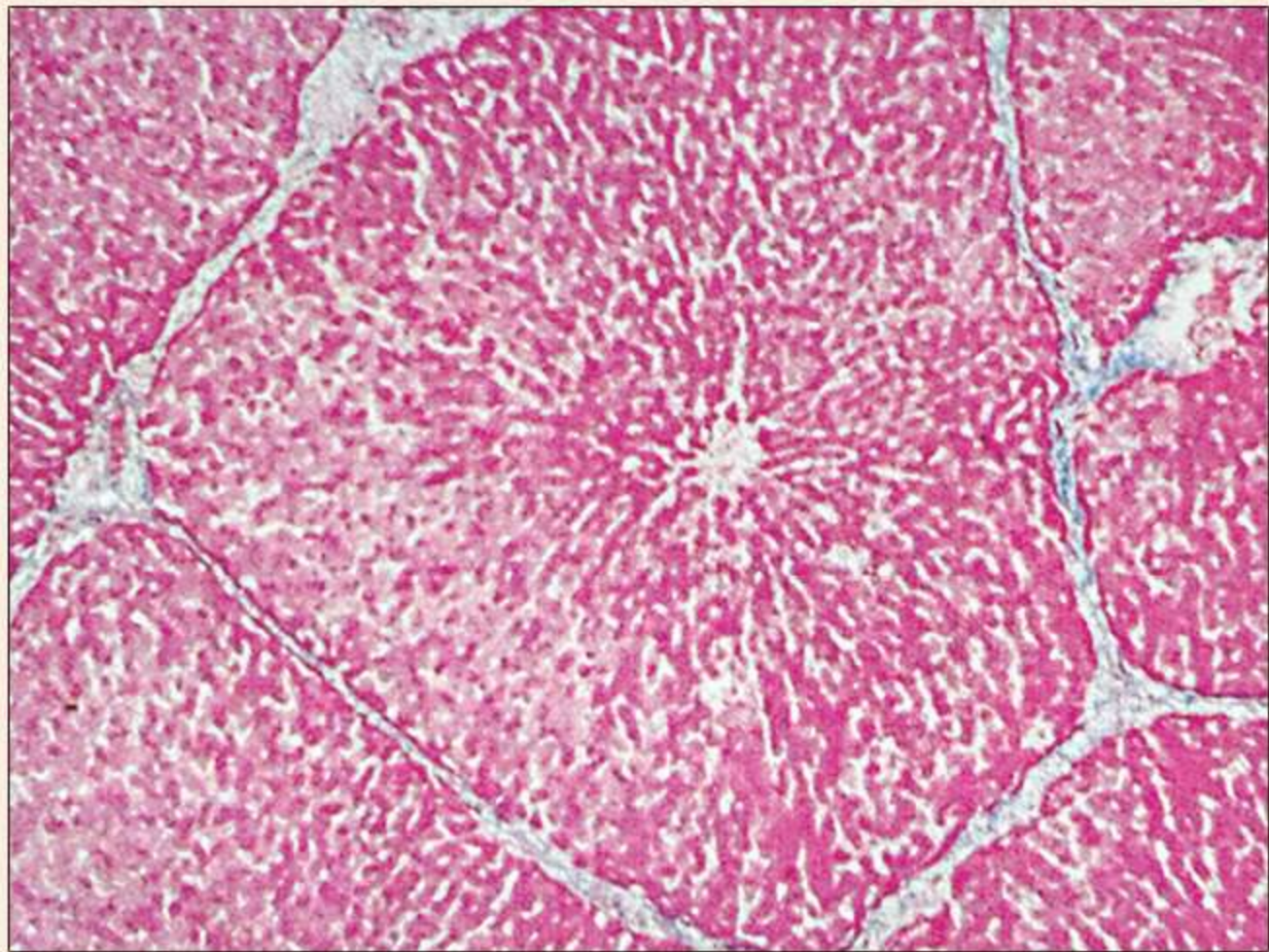




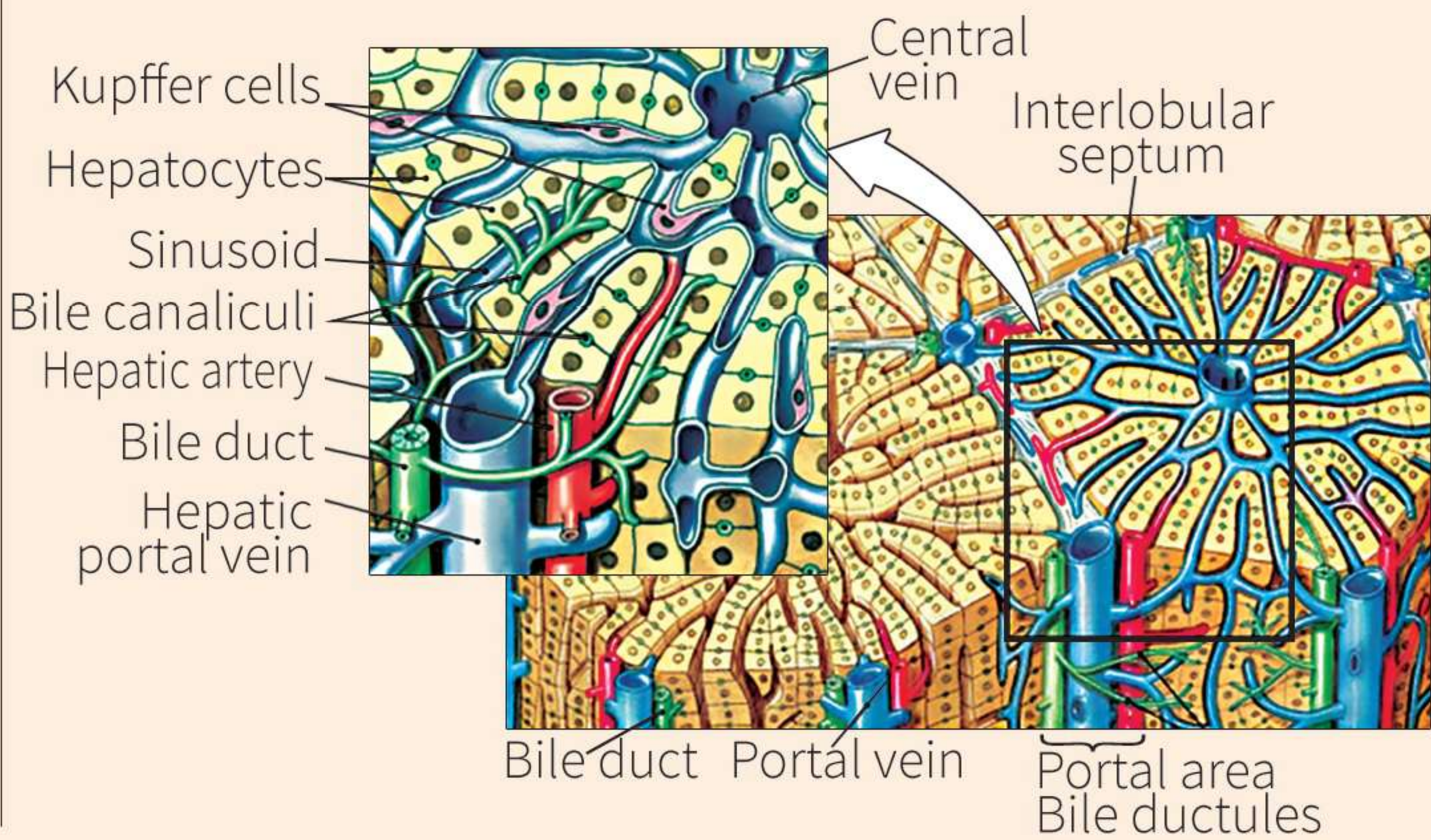
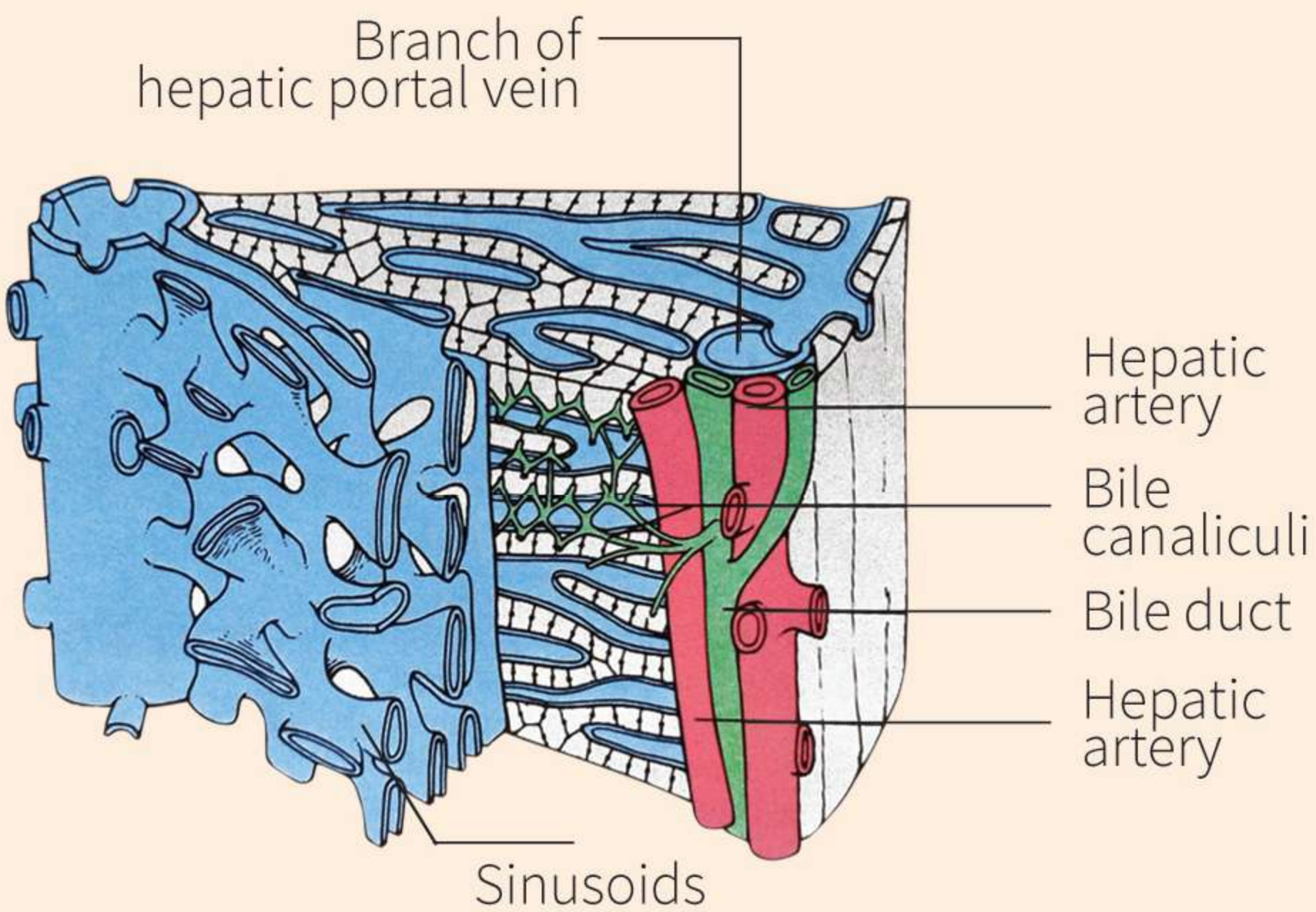
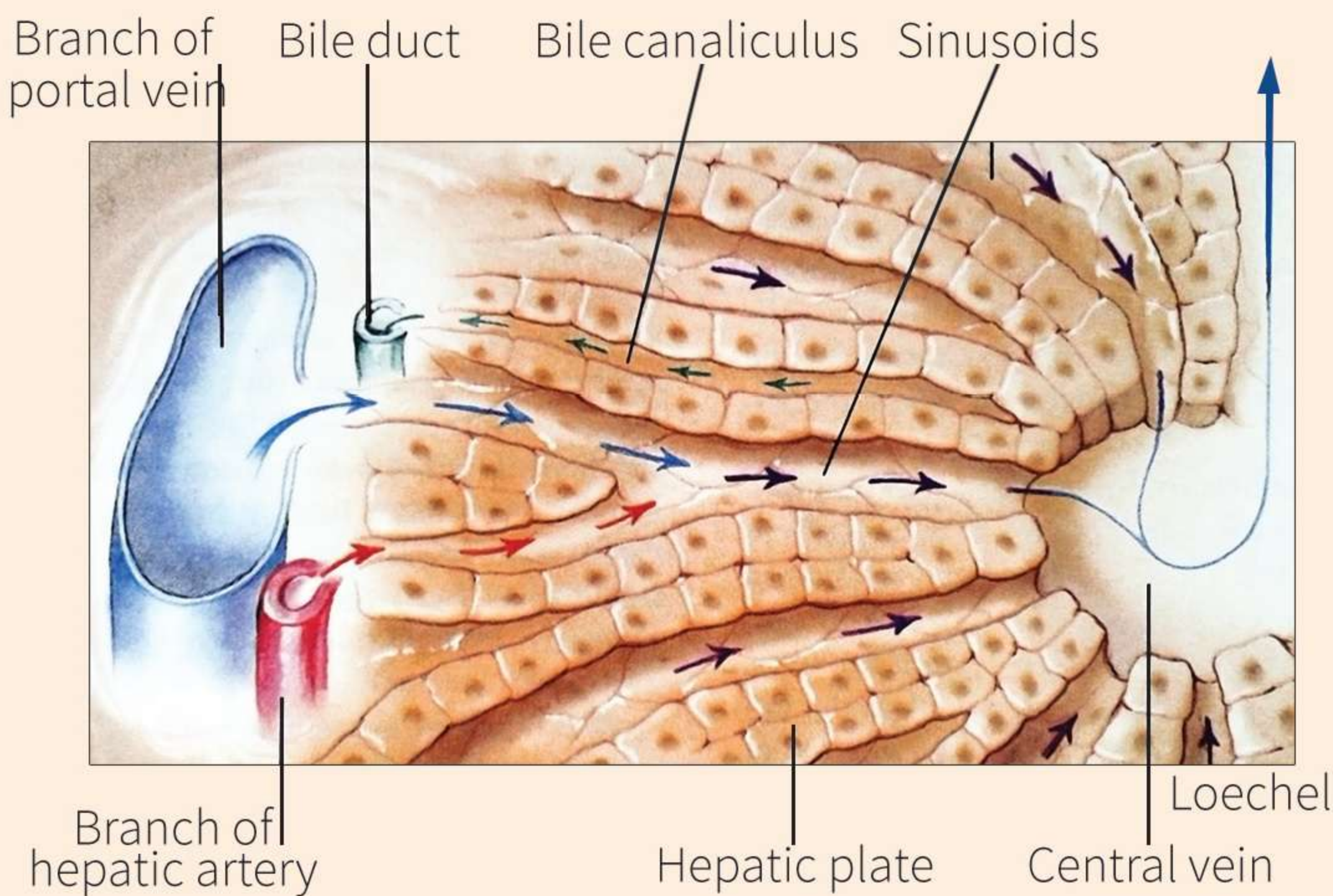
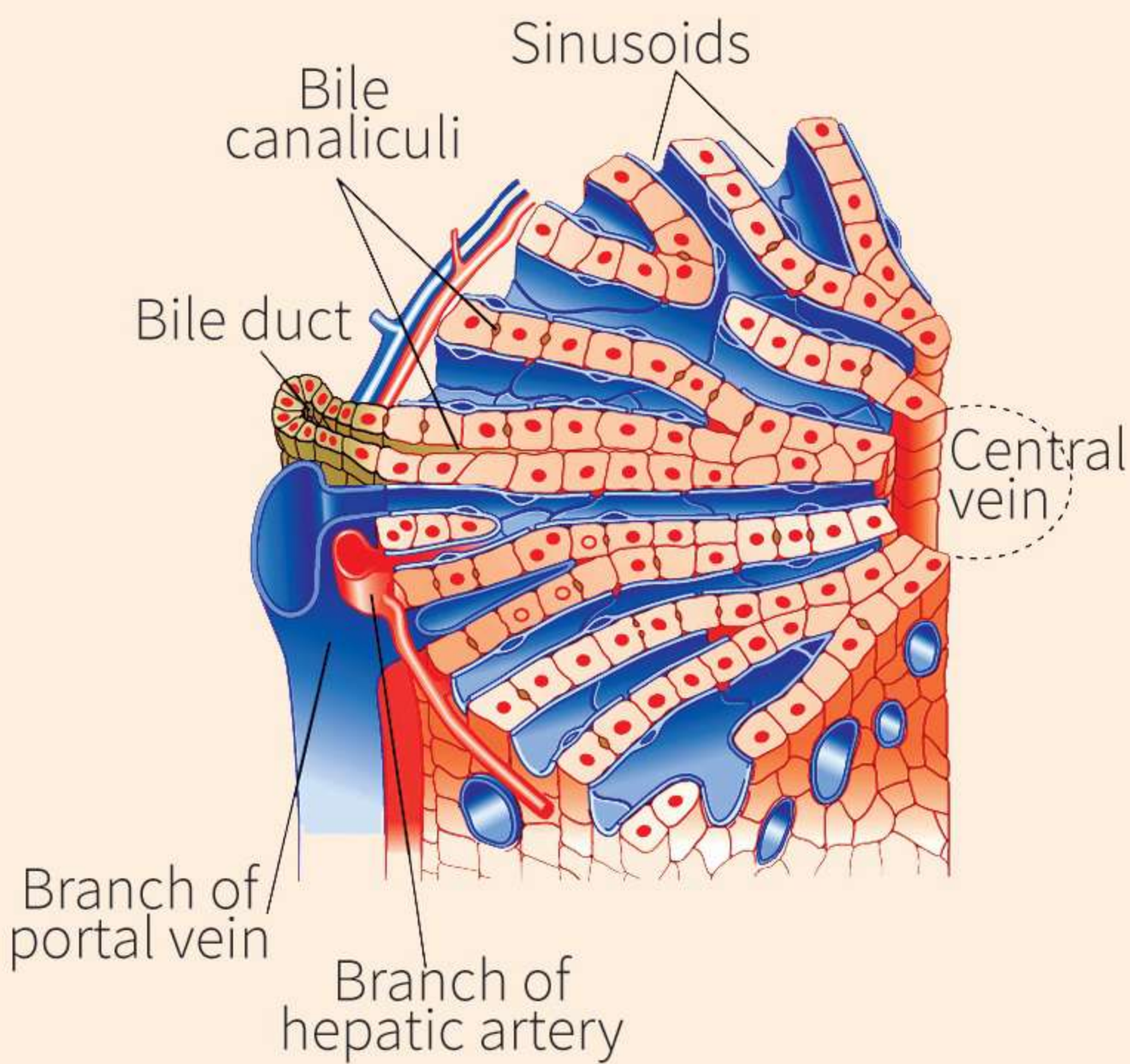
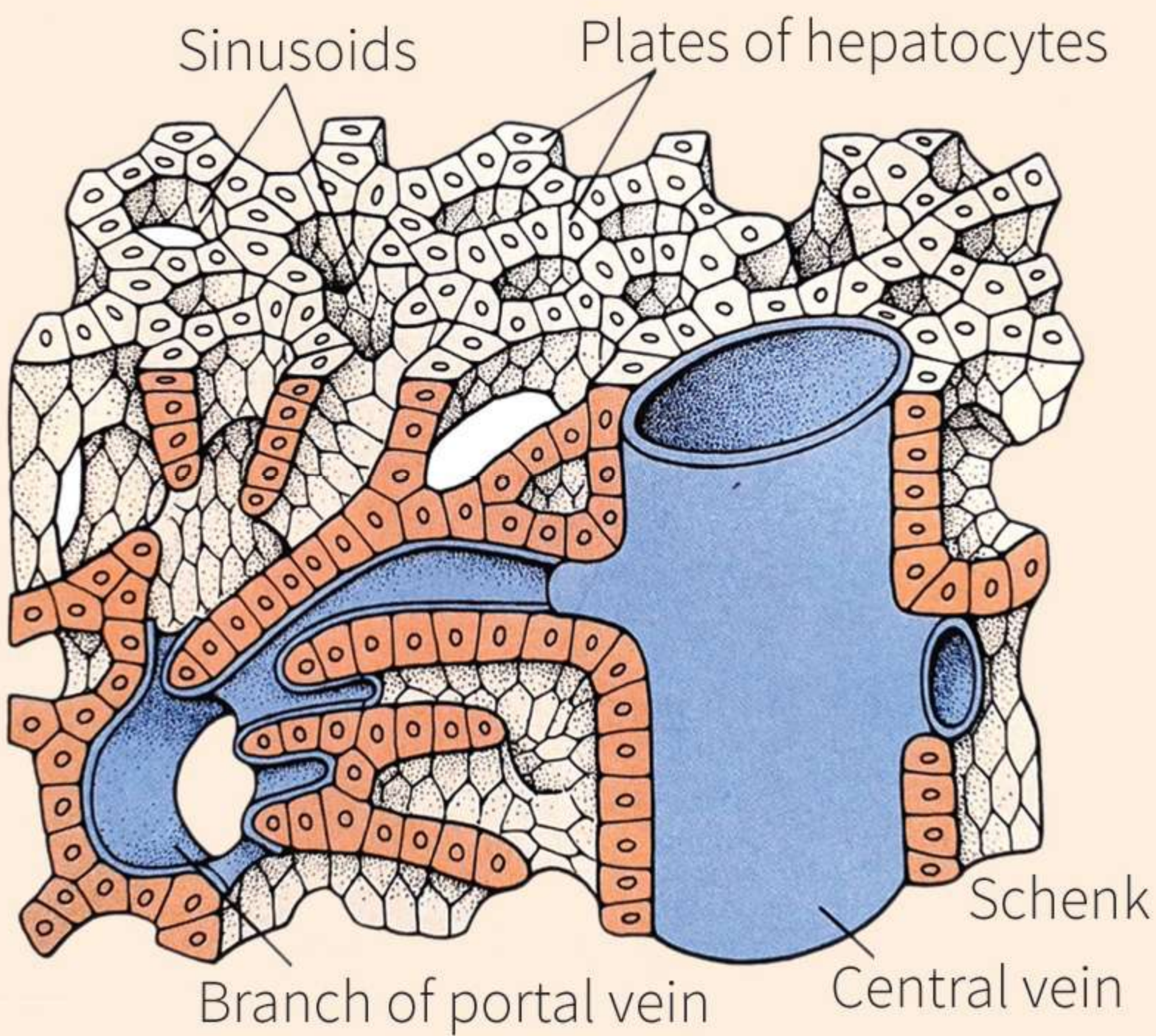
- ◆ Keeps the smooth relationship between the liver cells and the channels through which bile flow thereby facilitate the bile flow.
- ◆ amaraalaya facilitate the production of liver protein like albumin thereby holding the fluid inside the blood vessels and reduces the ascites within a period of one month and completely normalize the hepatic circulation which is evidenced by the reduction in the size of hepatic portal vein.



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A photomicrograph of a liver lobule in cross section



PORTAL HYPERTENSION & CIRRHOSIS

Increased blood pressure in the portal vein, a large blood vessel that carries blood from the stomach, intestine and spleen to the liver. The pressure in the vein of upper stomach and lower oesophagus is raised, causing them to widen (oesophageal varices) and sometimes to rupture. In addition, fluid is forced from the overloaded portal vein, resulting in ascites, an accumulation of fluid in the abdomen.

Symptoms

If the veins in the oesophagus and stomach rupture, this causes massive recurrent vomiting of blood and passing of black faeces. Ascites results in the abdominal swelling and discomfort and sometimes difficulty in breathing.

Pathogenesis.

In fact, the liver cells line up along the length of the sinusoids. This closer relationship between the liver cells and blood from the portal vein allows the liver cells to remove and add substances to the blood.

In cirrhosis, the relationship between blood and liver cells is destroyed. Even though the liver cells that survive or are newly-formed may be able to produce and remove substances from the blood, they do not have the normal, intimate relationship with the blood, and this interferes with the liver cell's ability to add or remove substances from the blood.

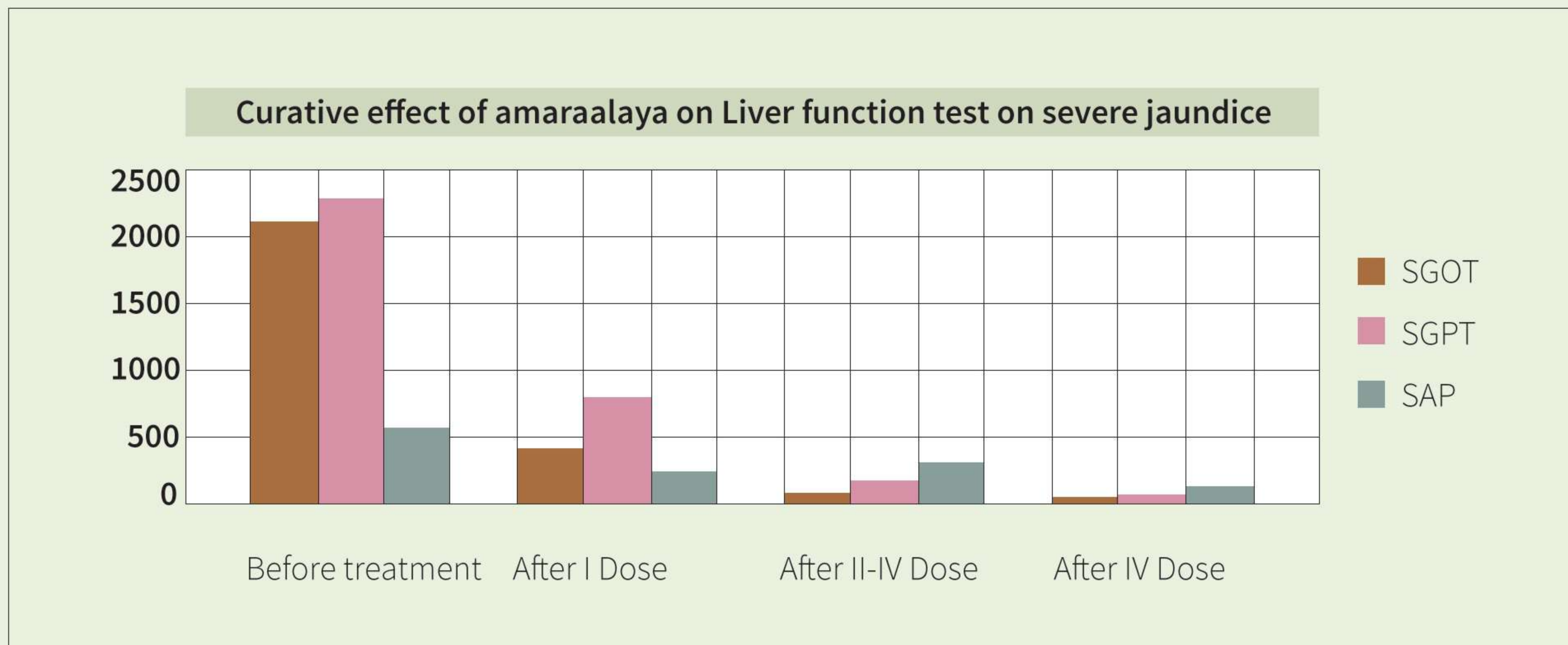
In addition, the scarring within the cirrhotic liver obstructs the flow of blood through the liver and to the liver cells. As a result of the obstruction to the flow of blood through the liver, blood "backs-up" in the portal vein, and the pressure in the portal vein increases, a condition called **portal hypertension**.

Because of the obstruction to flow and high pressures in the portal vein, blood in the portal vein seeks other veins in which to return to the heart, veins with lower pressures that bypass the liver.

Unfortunately, the liver is unable to add or remove substances from blood that bypasses it.

A second reason for the problems caused by cirrhosis is the disturbed relationship between the liver cells and the channels through which bile flows. In cirrhosis, the canaliculi are abnormal and the relationship between liver cells and canaliculi is destroyed.

As a result, the liver is not able to eliminate toxic substances normally, and they can accumulate in the body. To a minor extent, digestion in the intestine also is reduced.



- ◆ Ameliorates the elevated levels of aminotransferases in blood by maintaining the membrane damages to the hepatocytes and organelles. It also helps to regenerate the hepatocytes and improves liver function.
- ◆ Establish the production of blood clotting factors and other proteins in the liver cell by improving liver cell membrane damage and regeneration.

HEPATITIS

Hepatitis is most commonly caused by viral infection but may also be due to certain drugs, chemicals or poisons. The conditions may be either acute or chronic. The most causes is infection with a hepatitis virus, which may be of any of the types A,B,C,D,or E.

The hepatitis A and E viruses are transmitted mostly by the contamination of drinking water by infected faeces. The E virus is found mostly in developing countries, where as the A virus is common throughout the world.

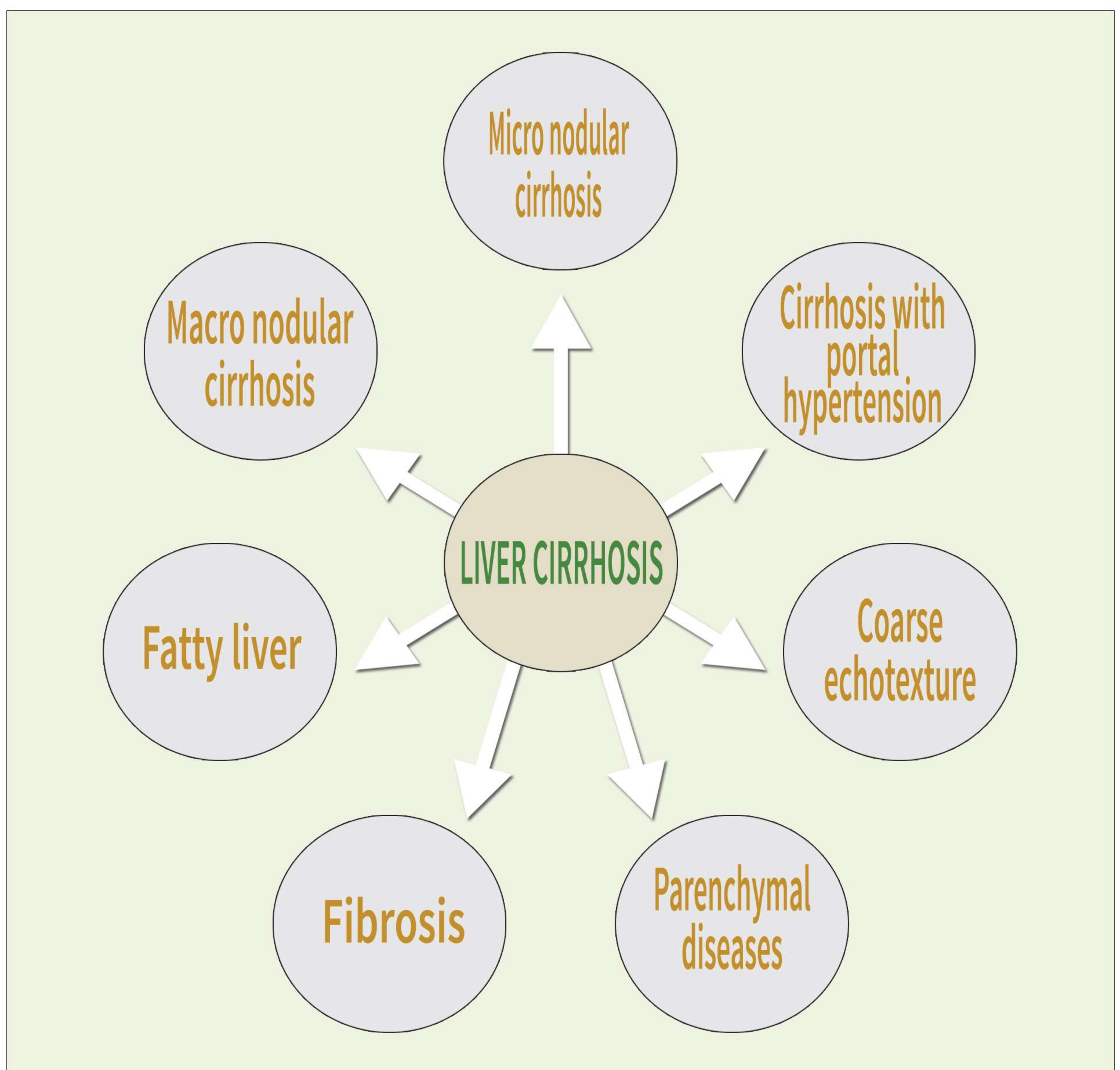
Hepatitis B and C viruses are transmitted sexually and also by blood and blood products. Hepatitis delta virus can exist only in someone who is already carrying, or has recently being infected with, hepatitis B. It seem to be spread mainly by needle sharing among drug abusers.

Thereby amaraalaya

- ◆ Disintegrates the Hepatitis B virus by clearing the HBs Ag (hepatitis B surface antigen) from the blood.
- ◆ It also vanishes hepatitis B core antigen (anti HBc IgM) from the blood thereby eliminate the hepatitis B virus infection.
- ◆ It digests anti HAV Ig M from the blood and destroyed the hepatitis A virus.
- ◆ Defeats anti HEV IgM from the blood thereby eliminate the hepatitis E virus.
- ◆ Disintegrates the hepatitis C virus by clearing the anti HCV from the blood.

Diet

- ◆ Advised to take two egg whites per day to increase the blood albumin level thereby to avoid the fluid escape from the vascular channels to interstitial space and peritoneal cavity.
- ◆ Advocate the patients to restrict high sodium intake to avoid excess sodium retention in the nephrons.
- ◆ Request them to avoid certain fruits (tender coconut, banana, grapes, oranges, pineapples and etc) having high potassium content to control the complications like vomiting.



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Macronodular cirrhosis

- Reduce Macronodularities.
- Diminishes portal hypertension.
- Decreases Hepatic encephalopathy.
- Ameliorates Hepatorenal syndrome.
- Maintains Na;K- Imbalance.
- Decreases Bacterial peritonitis.
- Reduces Oesophageal variceal bleeding.
- Brings down Severe Ascites
- Normalise albumin level.
- Cures pedal oedema.
- Ameliorates Breathing difficulties.



Micronodular cirrhosis

- Brings down micronodularities.
- Diminishes blood flow to liver.
- Reduces portal Hypertension.
- Ameliorates Hepatorenal syndrome.
- Maintains Na+K+imbalance.
- Reduces portal Bacterial peritonitis.
- Brings down Oesophageal variceal bleeding.
- Diminishes sever Ascites.
- Normalise albumin level.
- Cures pedal oedema.
- Ameliorates Breathing difficulties.

Cirrhosis liver(shrunken liver)

- Cures Nodularities.
- Decreases portal hypertension.
- Ameliorates Oesophageal variceal bleeding.
- Reduces Severe Ascities.
- Cures pedal oedema.
- Brings down Breathing difficulties.



Cirrhosis liver

- Cures Portal hypertension.
- Brings down Oesophageal variceal bleeding.
- Reduce Severe Ascites.
- Decrease pedal oedema.
- Reduce Breathing difficulties.
- Ameliorates Diffusely coarse echotexture.
- Cures Echo texture.
- Diminishes Early portal hypertension.
- No ascites.

Chronic parenchyma diseases

- Ameliorates Coarse echo texture.
- Decrease liver size decreases than normal



Fatty liver

- Cures Hepatomegaly.
- Reduce Enlarged liver.
- Ameliorates slightly altered liver function



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