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PHARMACOLOGY

200lvl

Ana 202 Assignment

Questions

1. Why do we have the portal vein or the liver receiving more blood from the vein than it receives from the artery?
2. Discuss five (5) disease conditions of the liver.
3. Why do we have the portal vein or the liver receiving more blood from the vein than it receives from the artery?

The liver has the most complicated circulation of any organ. According to the anatomical peculiarity of the double afferent blood supply of the liver, 75%-80% of the blood entering the liver is partially deoxygenated venous blood supplied by the portal vein, which collects all the blood that leaves the spleen, stomach, small and large intestine, gallbladder and pancreas. The hepatic artery accounts for the remaining 25% with well-oxygenated blood. Total hepatic blood flow ranges between 800 and 1200 mL/min, which is equivalent to approximately 100 mL/min per 100 g liver wet weight. Although the liver mass constitutes only 2.5% of the total body weight, the liver receives nearly 25% of the cardiac output.

The valve less portal vein is a low pressure/low resistance circuit, while the hepatic artery supplies the liver with arterial blood in a high pressure/high resistance system. The mean pressure in the hepatic artery is similar to that in the aorta, while portal vein pressure has been reported to range between 6 and 10 mmHg in humans when determined by direct cannulation or by splenic puncture. Portal pressure depends primarily on the degree of constriction or dilatation of the mesenteric and splanchnic arterioles and on intrahepatic resistance. Both afferent systems merge at the sinusoidal bed, where the pressure is estimated to be slightly, namely, 2-4 mmHg above that in the smallest collecting veins or the inferior vena cava.

2. Discuss 5 disease conditions of the liver

1. Fatty liver disease

Fat build up in the liver can lead to fatty liver disease.

There are two types of fatty liver disease:

* alcoholic fatty liver disease, which is caused by heavy alcohol consumption
* non-alcoholic fatty liver disease, which is caused by other factors experts are still trying to understand

Left unmanaged, both types of fatty liver disease can cause liver damage, leading to cirrhosis and liver failure. Diet and other lifestyle changes can often improve symptoms and reduce your risk of complications.

1. Cancer

Liver cancers first develop in your liver. If cancer starts elsewhere in the body but spreads to the liver, it’s called secondary liver cancer.

The most common type of liver cancer is hepatocellular carcinoma. It tends to develop as several small sports of cancer in your liver, though it can also start as a single tumor.

Complications of other liver diseases, especially those that aren’t treated, may contribute to the development of liver cancer.

1. Wilson’s disease

Wilson’s disease causes your liver to absorb copper instead of releasing it into your bile ducts. Eventually, your liver may become too damaged to store more copper, allowing it to travel through your bloodstream and damage other parts of your body, including your brain

1. Cirrhosis

Cirrhosis refers to scarring that results from liver diseases and other causes of liver damage, such as alcohol use disorder. Cystic fibrosis and syphilis may also lead to liver damage and, eventually, cirrhosis.

Your liver can regenerate in response to damage, but this process usually results in the development of scar tissue. The more scar tissue that develops, the harder it is for your liver to function properly.

In its early stages, cirrhosis is often treatable by addressing the underlying cause. But left unmanaged, it can lead to other complications and become life-threatening.

1. Liver failure

Chronic liver failure typically happens when a significant part of your liver is damaged and can’t function properly. Generally, liver failure related to liver disease and cirrhosis happens slowly. You may not have any symptoms at first. But over time, you might start to notice:

* jaundice
* diarrhea
* confusion
* fatigue and weakness
* nausea

It’s a serious condition that requires ongoing management.

Acute liver failure, on the other hand, happens suddenly, often in response to an overdose or poisoning.