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DEPARTMENT; PHARMACOLOGY

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QUESTION:

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.

ANSWERS:

1. The portal vein or hepatic portal vein (HPV) is a blood vessel that carries blood from the gastrointestinal tract, gallbladder, pancreas and spleen to the liver. This blood contains nutrients and toxins extracted from digested contents.

The blood flows through the liver tissue to the hepatic cells where many metabolic functions take place. The blood drains out of the liver via the hepatic vein. The reason why the portal vein receives more blood than that of the artery is because the hepatic artery provides 30 to 40% of the oxygen to the liver, while only accounting for 25% of the total liver blood flow. The rest comes from the partially deoxygenated blood from the portal vein. Approximately 75% of total liver blood flow is through the portal vein, with the remainder coming from the hepatic artery proper. The portal vein is not a true vein, which means it does not drain into the heart. Instead, it brings nutrient-rich blood to the liver from the gastrointestinal tract and spleen. Once there, the liver can process the nutrients from the blood and filter out any toxic substances it contains before the blood goes back into general circulation.

2. Liver disease is a general term that refers to any condition affecting your liver. These conditions may develop for different reasons, but they can all damage your liver and impact its function.

HEPATITIS

Hepatitis is a viral infection of your liver. It causes inflammation and liver damage, making it difficult for your liver to function as it should. There are five types of hepatitis:

* **Hepatitis A:** Is typically spread through contact with contaminated food or water. Symptoms may clear up without treatment, but recovery can take a few weeks.
* **Hepatitis B:** can be acute (short-term) or chronic (long-term). It’s spread through bodily fluids, such as blood and semen. While hepatitis B is treatable, there’s no cure for it. Early treatment is key to avoiding complications, so it’s best to get regular screenings if you’re at risk.
* **Hepatitis C**: can also be acute or chronic. It’s often spread through contact with blood from someone with hepatitis C. While it often doesn’t cause symptoms in its early stages, it can lead to permanent liver damage in its later stages.
* **Hepatitis D**: is a serious form of hepatitis that only develops in people with hepatitis B — it can’t be contracted on its own. It can also be either acute or chronic.
* **Hepatitis E:** is usually caused by drinking contaminated water. Generally, it clears up on its own within a few weeks without any lasting complications.

FATTY LIVER DISEASE

Fat buildup 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
* nonalcoholic 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.

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.

GENETIC CONDITIONS

Several genetic conditions, which you inherit from one of your parents, can also affect your liver:

**Hemochromatosis:** Causes your body to store more iron than it needs. This iron remains in your organs, including your liver. This can lead to damage over a long period of time if not managed.

**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.

**Alpha-1 antitrypsin (AT) deficiency**: Occurs when your liver can’t make enough alpha-1 antitrypsin, a protein that helps prevent enzyme breakdowns throughout your body. This condition can cause lung disease as well as liver disease. There’s no cure, but treatment can help.