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MATRIC NO: 18/MHS05/011

COURSE: ANA 202

DEPARTMENT: PHYSIOLOGY

COLLEGE: MHS

QUESTION

1. Why do we have the portal vein or the liver receiving more blood from the vein that it receives from the artery.
2. Discuss 5 disease conditions of the liver.

1. The portal vein brings venous blood from the spleen, pancreas and small intestine so that the liver can process the nutrients and byproducts of food digestion.

2. (i) Primary Biliary Cholangitis: it is an auto-immune disease that attacks tiny tubes in the liver called bile ducts. Bile ducts carry bile, a chemical that helps you digest. When the ducts are injured, the bile backs up inside your liver and scars it. Women come down with this more often than men. This disease develop over the next five to 20 years.

   Common early symptoms are:

   - Fatigue
   - Itchy skin
   - Dry eyes and mouth.

   The liver inflammation seen in primary biliary cholangitis starts when certain types of white blood cells (T lymphocytes) start to collect in the liver. Normally, these immune cells detect and help defend against germs, like bacteria. But in primary biliary cholangitis, they mistakenly destroy the healthy cells lining the small bile ducts in the liver. It is most common in Northern Europe and North America. As the liver damage worsens Primary biliary cholangitis can cause serious health problems, such as cirrhosis, which makes it difficult for the liver to function well and may lead to liver failure.

(ii) Primary sclerosing cholangitis: it scars the bile ducts and eventually blocks them. The bile builds up inside the liver and that makes it harder for the liver to work. Men are more likely to get it than women. The symptoms includes;

- Itchy skin
- Belly pain
- Extreme tiredness
- Jaundice, yellowing of the skin and eyes
- Chills and fever from infection of the bile ducts.

It has an unknown cause but has an association with inflammatory bowel disease, especially ulcerative colitis. It is thought that there may be an autoimmune component to the disease where the body's immune system attacks the bile ducts and causes them to become, inflamed and narrowed.

This disease is a rare disorder. An estimated 1 in ten thousand people have primary sclerosing cholangitis and it is diagnosed in approximately 1 in a hundred thousand people per year worldwide.

(iii) Liver cell adenoma: It is also known as hepatocellular adenoma or liver. It is a tumor that doesn't have cancer. Its uncommon, but women who take contraceptives for a long time are more prone than other people to develop it. There is a little chance that it could eventually turn to cancer. Liver cell adenoma doesn't often cause symptoms. Though sometimes it causes;

- mild symptoms, such as pain
- nausea, or a full feeling.

This typically occurs when the tumour is large enough to put pressure on neighbouring organs and tissues. A ruptured adenoma is serious. It can cause; Sudden abdominal pain, Low blood pressure and so on. In rare cases, it can be life-threatening.

(iv) Hyperoxaluria: this hits when urine has too much of a chemical called **Oxalate**. Oxalate is a natural chemical in the body and also contained in some foods. If the liver makes too little of the chemical, Oxalate builds up and causes kidney stones or kidney failure. And if the kidney fails, it results in oxalosis, where the oxalate collects in other organs and causes more trouble. Oxalate is normally eliminated from the body through the kidneys in the urine and can also be eliminated through stool.

Symptoms of hyperoxaluria can develop anytime from infancy to later adulthood (over 70 years of age). The most common initial symptom is usually kidney stones. However, initial symptoms can vary from mild to severe. About 50 percent of patients with primary hyperoxaluria experience kidney failure by age 30. Older children and adults who develop primary hyperoxaluria tends to have better outcomes. These symptoms include:

- Pain in the lower back or side of body that start as dull ache that may come and go.
- Nausea and/or vomiting with pain

- Blood in urine.
- Pain when urinating.
- Fever/chills.
- Urine that smells bad or looks cloudy. It is sometimes called Bird's disease, after Golding Bird, who first described the condition.

There are two types of hyperoxularia,

- Primary hyperoxaluria: this is a rare, genetic (inherited) disorder of the liver in which the liver either does not produce enough enzymes to prevent the overproduction of oxalate or the enzymes do not work properly.
- Secondary hyperoxaluria: it is a condition in which excess oxalate is absorbed into the gastrointestinal (GI) tract and then excreted in the urine.

(v) Hemochromatosis: Sometimes it's called "iron overload". Normally, the intestines absorb just the right amount of iron from meals. But in hemochromatosis, the body absorbs too much iron, and it has no way to get rid of it. The extra iron builds up in the liver, heart or other organs and can lead to life- threatening conditions such as liver diseases, heart disease or diabetes.

They are classified into two

- Primary hemochromatosis; which is hereditary. If an individual gets two of the genes that cause it, one from

the mother and one from the father, he/she is likely to have a high risk of getting the disorder.

- Secondary hemochromatosis: this happens because of other conditions the individual might have and these include: certain kinds of anemia, getting a lot of blood transfusions and so on.

In men, symptoms tend to show up between ages 30 and 50. And in women, often don't show signs of this condition until they're over 50 or past menopause. That maybe because they loose iron when they get their periods and give birth. Symptoms include:

- Pain in joints, especially knuckles
- Feeling tired
- Unexplained weight loss
- Pain in the belly and so on.