

“One life, one liver, Alcohol is a poison for your liver’ .Alcohol (beer, wine, whisky) consumption and the 3 main stages of alcohol-related liver disease (ARLD): (1) fatty liver disease, (2) alcoholic hepatitis, (3) alcoholic Cirrhosis upto complications such as build-up of toxins in the brain (encephalopathy) among youth and adult massive drinkers of the regions of Sodnac: A study from a non-consumer perspective

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ABSTRACT: The paper elaborates on the harmful impact of Alcoholism (beer, whisky, wine) on the liver. The illness associated with alcoholism to the liver is called the alcohol-related-liver disease ARLD. There are 3 main stages of the ARLD, namely fatty liver disease, alcoholic hepatitis (unrelated to virus hepatitis) and cirrhosis and this can lead to complications such as built-up of toxins in the brain leading to encephalopathy among youths and adults. One life, one liver was the theme of WHO ² to mark the world hepatitis day in July 2023. Consultant hepatologist Mark Wright¹ said that as far as your liver's concerned, alcohol is a poison if you are drinking too much, you start to deposit fat in your liver. The liver does not like having all that fat in it and it does not like the toxic effect of the alcohol. It can become inflamed. Just as if you get inflammation, if you have burnt yourself, your body repairs itself, you get scar tissue and the same sort of thing happens in your liver. With repeated cycles of damage and repair, damage and repair that can accumulate so much that you end up with cirrhosis which is one of the later stages of alcoholic liver disease. There are different degrees of cirrhosis. There's currently no specific medical treatment for ARLD. The main treatment is to stop drinking, preferably for the rest of your life.

KEYWORDS: liver, alcoholism, ARLD, fatty liver, hepatitis, cirrhosis

Date of Submission: 04-11-2023

Date of Acceptance: 17-11-2023

I. INTRODUCTION

To mark World Hepatitis Day ², WHO called for scaling up testing and treatment for viral hepatitis, warning that the disease could kill more people than malaria, tuberculosis, and HIV combined by 2040, if current infection trends continue. Hepatitis causes liver damage and cancer and kills over a million people annually. Of the 5 types of hepatitis infections, hepatitis B and C cause most of the disease and deaths. Hepatitis C can be cured; however, only 21% of people living with hepatitis C infection are diagnosed and only 13% have received curative treatment. Just 10% of people living with chronic hepatitis B are diagnosed, and only 2% of those infected are receiving the lifesaving medicine. Under the theme of “One life, one liver”, WHO’s World Hepatitis Day campaign highlights the importance of protecting the liver against hepatitis for living a long, healthy life. Good liver health also benefits other vital organs – including the heart, brain and kidneys – that rely on the liver to function. “Millions of people are living with undiagnosed and untreated hepatitis worldwide, even though we have better tools than ever to prevent, diagnose and treat it,” said Dr Tedros Adhanom Ghebreyesus, WHO Director-General. “WHO remains committed to supporting countries to expand the use of those tools, including increasingly cost-effective curative medication, to save lives and end hepatitis.”

II. LITERATURE REVIEW

Structure and functions of the liver ³

The liver is located deep in the right upper quadrant and is well protected by the right ribcage. Its size, as measured in the right midclavicular line, is about 12–15 cm and its weight is about 1500 g. The weight of the liver is approximately 2.5% of the body weight. The right lobe of the healthy liver is not usually palpable. The left lobe may be palpable up to midway between the xiphisternum and umbilicus. This means that a palpable left lobe, in isolation, is not of clinical importance. In a patient, the consistency (normal consistency is firm), surface (normal is smooth, non-tender) and margins (normal is regular) of the liver are much more important features than the liver size alone. The liver is a very vascular organ. About 1500 mL of blood passes through the

liver every minute, which is approximately 25% of the cardiac output (normal cardiac output is 5L/min). Compared to its weight (which is about 2.5% of the body weight), it receives a massive blood supply. It is important to realize that the majority (about 65%) of the blood supplied to the liver is deoxygenated venous blood (which carries much less oxygen than arterial blood) from the small and large intestine. Only one third of the supply is oxygenated arterial blood and carries a high level of oxygen. This dual blood supply serves three important functions. First, the dual blood supply gives a safety cushion to the liver and keeps it alive even if one supply is terminated because of some pathological state. Second, the venous blood carries several harmful substances, toxins and biological products derived from food and gut bacteria present in the large intestine; the liver acts as a filter that prevents the systemic circulation from exposure to these substances; when this filter function of the liver is impaired, such as in patients with liver failure, these harmful substances reach to the brain and the patient becomes unconscious. Third, venous blood carries a lot of nutrients from the small intestine; these nutrients, if released unchecked into the circulation, will produce metabolic imbalance. The liver acts as a temporary warehouse to store excessive amounts of these nutrients and releases them at the time of need (such as fasting). During normal blood circulation, deoxygenated blood is collected from all over the body by the venous system and is pumped by the right side of the heart into the lungs. In the lungs, oxygenation of blood takes place and oxygen-rich blood is returned to the left side of the heart and pumped through the arteries throughout the body. Capillaries connect arteries to veins. Oxygen and carbon dioxide is exchanged in arteries, and blood collected from the capillaries returns to the lungs through veins. During normal blood circulation, deoxygenated blood is collected from all over the body by the venous system and is pumped by the right side of the heart into the lungs. In the lungs, oxygenation of blood takes place and oxygen-rich blood is returned to the left side of the heart and pumped through the arteries throughout the body. Capillaries connect arteries to veins. Oxygen and carbon dioxide is exchanged in arteries, and blood collected from the capillaries returns to the lungs through veins. During normal blood circulation, deoxygenated blood is collected from all over the body by the venous system and is pumped by the right side of the heart into the lungs. In the lungs, oxygenation of blood takes place and oxygen-rich blood is returned to the left side of the heart and pumped through the arteries. During normal circulation, the blood collected from the capillaries is returned to the lungs through veins. In the portal system, the blood returning from the capillaries is not directly returned to the venous system but is again passed through another set of capillaries in another organ or tissue. There are two portal systems in the human body: the pituitary-hypophyseal system in the brain and the second in the liver. The objective of this portal system is to provide the liver with extra circulation time and expose the blood to the extensive network of hepatocyte plates. It helps the liver to perform its metabolic and filtering activities more efficiently. Almost all the blood coming from the intestine is collected and filtered through the liver. There are three major functions of the liver: (i) glucose metabolism, which maintains the blood glucose within an acceptable range; (ii) excretion of waste substances from the body in the bile; and (iii) synthesis of important body proteins such as albumin and coagulation factors. The role of albumin is to maintain the oncotic pressure; the half-life is 21 days, which is important to know in cases of liver dysfunction.

III. DISCUSSION

Alcohol-related liver disease (ARLD)¹

Alcohol-related liver disease (ARLD)¹ refers to liver damage caused by excess alcohol intake. There are several stages of severity and a range of associated symptoms.

Symptoms of alcohol-related liver disease (ARLD)

ARLD does not usually cause any symptoms until the liver has been severely damaged. When this happens, symptoms can include: feeling sick, weight loss, loss of appetite, yellowing of the whites of the eyes or skin (jaundice), swelling in the ankles and tummy, confusion or drowsiness, vomiting blood or passing blood in your stools. This means ARLD is frequently diagnosed during tests for other conditions, or at a stage of advanced liver damage.

Alcohol and the liver¹

The liver is one of the most complex organs in the body. Its functions include: filtering toxins from the blood, aiding digestion of food, regulating blood sugar and cholesterol levels, helping fight infection and disease. The liver is very resilient and capable of regenerating itself. Each time your liver filters alcohol, some of the liver cells die. The liver can develop new cells, but prolonged alcohol misuse (drinking too much) over many years can reduce its ability to regenerate. This can result in serious and permanent damage to your liver. ARLD is common in the UK. The number of people with the condition has been increasing over the last few decades as a result of increasing levels of alcohol misuse.

Stages of ARLD^{1, 5, 6}

There are 3 main stages of ARLD, although there's often an overlap between each stage.

Stage one : Alcoholic fatty liver disease or Steatosis

Drinking a large amount of alcohol, even for just a few days, can lead to a build-up of fats in the liver. At this stage, fat accumulates in the liver parenchyma. This is called alcoholic fatty liver disease, and is the first stage of ARLD. Fatty liver disease rarely causes any symptoms, but it's an important warning sign that you're drinking at a harmful level. Fatty liver disease is reversible. If you stop drinking alcohol for some time (months or years), your liver should return to normal.

Stage Two : Alcoholic hepatitis

Alcoholic hepatitis, which is unrelated to infectious hepatitis, is a potentially serious condition that can be caused by alcohol misuse over a longer period. Inflammation of liver cells takes place at this stage, and the outcome depends on the severity of the damage. Alcohol abstinence, nutritional support, treatment of infection, and prednisolone therapy in severe cases can help in the treatment of alcoholic hepatitis, but more severe cases lead to liver failure. Liver damage at this stage is irreversible and leads to complications of cirrhosis and portal hypertension. When this develops, it may be the first time a person is aware they're damaging their liver through alcohol. Less commonly, alcoholic hepatitis can occur if you drink a large amount of alcohol in a short period of time (binge drinking). The liver damage associated with mild alcoholic hepatitis is usually reversible if you stop drinking permanently. Severe alcoholic hepatitis, however, is a serious and life-threatening illness. Many people die from the condition each year in the UK, and some people only find out they have liver damage when their condition reaches this stage.

Stage Three Cirrhosis

Cirrhosis is a stage of ARLD where the liver has become significantly scarred. Even at this stage, there may not be any obvious symptoms. It is generally not reversible, but stopping drinking alcohol immediately can prevent further damage and significantly increase your life expectancy.

Treating alcohol-related liver disease (ARLD)

There's currently no specific medical treatment for ARLD. The main treatment is to stop drinking, preferably for the rest of your life. This reduces the risk of further damage to your liver and gives it the best chance of recovering. If a person is dependent on alcohol, stopping drinking can be very difficult. But support, advice and medical treatment may be available through local alcohol addiction support services. A liver transplant may be required in severe cases where the liver has stopped functioning and does not improve when you stop drinking alcohol. You will only be considered for a liver transplant if you have developed complications of cirrhosis despite having stopped drinking. All liver transplant units require people with ARLD to not drink alcohol while awaiting the transplant, and for the rest of their life.

IV. FINDINGS

Complications: Death rates linked to ARLD have risen considerably over the last few decades. Alcohol misuse is now one of the most common causes of death in the UK, along with smoking and high blood pressure.

Life-threatening complications of ARLD include: internal (variceal) bleeding, build-up of toxins in the brain (encephalopathy), fluid accumulation in the abdomen (ascites) with associated kidney failure, liver cancer, increased vulnerability to infection

Preventing alcohol-related liver disease (ARLD): The most effective way to prevent ARLD is to stop drinking alcohol or stick to the recommended limits: men and women are advised not to regularly drink more than 14 units a week, spread your drinking over 3 days or more if you drink as much as 14 units a week, if you want to cut down, try to have several drink-free days each week. A unit of alcohol is equal to about half a pint of normal-strength lager or a pub measure (25ml) of spirits. Even if you have been a heavy drinker for many years, reducing or stopping your alcohol intake will have important short-term and long-term benefits for your liver and overall health. Cirrhosis⁴ is scarring (fibrosis) of the liver caused by long-term liver damage. The scar tissue prevents the liver working properly. Cirrhosis is sometimes called end-stage liver disease because it happens after other stages of damage from conditions that affect the liver, such as hepatitis. Your liver may keep working even when you have cirrhosis. However, cirrhosis can eventually lead to liver failure, and you can get serious complications, which can be life threatening. Treatment may be able to stop cirrhosis from getting worse.

Symptoms of cirrhosis: A patient may not have any symptoms during the early stages of cirrhosis. As your liver becomes more damaged, you may: feel very tired and weak, feel sick (nausea), lose your appetite, lose weight and muscle mass, get red patches on your palms and small, spider-like blood vessels on your skin (spider angiomas) above waist level. If cirrhosis gets worse, some of the symptoms and complications include: yellowing of the skin and whites of the eyes (jaundice), vomiting blood, itchy skin, dark pee and tarry-

looking poo,bleeding or bruising easily, swollen legs (oedema) or tummy (ascites) from a build-up of fluid, loss of sex drive (libido)

V. CONCLUSION

One line concludes this paper : The only remedy to protect our liver is not to consume any form of alcohol. Zero intake of alcohol. Do not consume any alcohol, do not drink ever in your life. It is a poison.

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