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Review Article

ASTHMA LEADS TO LIVER CIRRHOSIS -REVIEW STUDY¹Dr Izza Naeem,²Dr Muhammad Huzaifa,³Dr Hamna Iqbal¹MBBS, Quaid e Azam Medical College, Bahawalpur., ²MBBS, Hebei North University P.R.C.,³MBBS, Fatima Jinnah Medical University, Lahore.**Article Received:** October 2020**Accepted:** November 2020**Published:** December 2020**Abstract:**

The liver disease mortality rose by 400 percent from 1970 to 2010 with mortality rates of about 500 percent for those under 65 years of age mostly females which have asthma. Because of chronic liver disease, up to 75% of deaths are underlying and preventable by alcohol aetiology. Advanced progressive liver disease contributes to clinical symptoms of various processes, all of which need critical treatment. Education to critical treatment for patients with cirrhosis is seen to be gradually endorsing this argument. These patient has higher readmission rates to ICU, longer ICU stays and greater organ support requirements. However, since the 1980s when deaths were estimated to be up to 100%, both the mortality of ICU and the hospitable population with cirrhosis have risen. Analysis reported in the scientific journal Hepatology uncovered key results that indicate that the elimination of liver fibrosis may be correlated with anti-inflammatory cromolyn sodium. Researcher also assessed the invasion and proliferation of mast cells that result in liver fibrosis and release of histamine. AstraZeneca, a common medicine for the prevention of asthma attacks, can cause serious liver damage in some users. The patient was mostly due to bronchial asthma with the clinical signs. PCS is not easily treated and patients also require liver transplantation. In these 3 patient's bronchial asthma has been used for steroid treatment known to have adverse effects in PBC. In addition to the ductal and hepatic parenchymal modifications typical of PBC, hepatic histology revealed mild to moderate eosinophilic infiltration.

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INTRODUCTION:

Cirrhosis is a late stage of hepatitis scarring (fibrosis) caused by a number of diseases and conditions in the liver, including hepatitis and chronic alcoholism. It tries to repair itself every time you injure your liver—whether due to illness, excessive alcoholic drinking or a different cause. (Bjelac, Patil, & Radojicic, 2016).

Causes:

- Cirrhosis is the most common cause
- Drug persistent neglect (drinking too much alcohol for a long time)
- Hepatitis C chronic (hepatitis C that has lasted at least 6 months)
- Fatty liver not because of alcohol intake (non-alcoholic steatohepatitis)
- One way to destroy the liver is to accumulate fat chronic alcohol dependence (fatty liver). Non-alcoholic liver (called non-alcoholic fatty liver) typically exists in overweight individuals with diabetes or pre-diabetes and/or elevated cholesterol.
- Cirrhosis may occur if there are fibrotic diseases, drugs or toxins (see table Some illnesses and medications that can induce liver fibrosis). Certain genetic metabolic diseases, such as iron excess (hemochromatosis), and alpha-1 antitrypsin deficiency and bile canal disorders, including primary bile cholangitis (PBC) and primary sclerosis cholangitis, are several special causes (PSC). (CATES, 2018)

Symptoms:

- Most patients with cirrhosis may not have signs and feel healthy for years. Approximately a third never experience signs.
- Others feel drained, normally uncomfortable, losing appetite and weight:
- They will stretch their fingertips (called clubbing).
- The skin and the whites of the eyes may appear dark as cola, and the jaundice may grow.
- If fats and the vitamins that are fat soluble are poorly absorbed, stools can be light, sluggish, bulky, sticky and oddly scent-free (called steatorrhea).
- Most individuals are undernourished and lose weight due to their lack of appetite and the low consumption of fats and vitamins. The bleeding of tiny blood vessels in the skin is possible for individuals to get a reddish violet rash of small points or bigger spots.

- When the liver function has long been degraded, people can itch and little yellow fat bumps can be placed in the skin or eyelids.
- Other signs may occur if chronic alcohol addiction causes cirrhosis or if people are dealing with chronic liver disease:
- Waste the muscles (atrophy).
- The palms grow red (called palmar erythema).
- The hand tendons are diminished and the fingertips are curled (called Dupuytren contracture).
- The skin is riddled with microscopic spider-like veins (spider angiomas).
- Enlarge the glands of salivary in the buttocks.
- Function of nerves beyond the brain and the backbone (peripheral nerves) (called peripheral neuropathy).
- The weakened hepatitis may be swollen (gynecomastia) or shrinking tests (testicular atrophy) as oestrogen (female hormone) cannot break down, as is normally the case. Diminished hair in the armpits. (Fukui, 2020)

Complications of cirrhosis:**Portal hypertension**

The most severe complication is portal hypertension, which is elevated blood pressure in the portal vein. These veins will expand and rotate as blood helps the veins attached to it (called varicose veins). At the lower end of the oesophagus (oesophageal varicose veins—see Portal hypertension), in the stomach (gastric varicose veins) or rectum, the veins can grow (rectal varices). Varicose veins are susceptible to bleeding and delicate. High blood pressures can be vomited if the oesophageal or stomach varicose veins bleed (see Gastrointestinal Bleeding). Bleeding can cause anaemia if it is sluggish and lasts for a long time. Bleeding will cause shock and death if it is faster and more severe. (Furlan & Borhani, 2018)

Hypertension of the Porto pulmonary:

High blood pressure in the lung arteries can cause portal hypertension (called Porto pulmonary hypertension). This problem can cause heart failure symptoms such as breathing problems particularly when you lie down and tiredness. (Kalaitzakis & Bjornsson, 2019)

Bloody irregularity:

Other problems can interfere with blood clots caused by cirrhosis (disordered blood clotting). Any issues make it more likely that people would bleed. The spleen will for example, expand. The expanded spleen will capture cells and platelets of blood. Thus the

plasma contains less platelets (helping blood clot). In addition, the weakened liver is less able to create blood clotting proteins (clotting factors). (Matkovska, 2020)

Any liver disorders however increase the risk of blood clotting. The weakened liver, for example, is less capable of generating compounds that protect blood from too much coagulation. Blood clots can then form in the arteries of the blood (for example, leg veins) and can pass to the lungs (a disorder called pulmonary embolism). (A. Rambaldi & Gluud, 2017)

Higher infection risk:

The number of white blood cells called leukopenia) will be decreased when they are stuck in the swollen spleen. The risk of infections increases if the number of white blood cells is limited.

Kidney failure:

Liver failure will ultimately result in inadequate kidney – a disorder known as liver syndrome. Less urine is formed and excreted from the body in this syndrome, which induces the accumulation of radioactive compounds. Finally, it is difficult to breath for people with hepatoid syndrome. This renal condition may be too serious for dialysis.

Brain activity disruption:

Liver disease can induce impairment of the brain's function known as liver encephalopathy) because of the lack of radioactive blood from the weakened liver. The contaminants then go into the stream of the blood and develop into the brain.

Cancer of liver:

Liver cancer (hepatocellular carcinoma, or hepatoma) may develop particularly if cirrhosis is due to chronic hepatitis B or hepatitis C, chronic misuse of alcohol, hemochromatosis, antitrypsin alpha-1 deficiency, and storage of glycogen.

Prognosis:

Cirrhosis is continuous and generally progressive, although it is also impossible to determine how far it can develop. Persons with cirrhosis depend on their cause, severity, existence and efficacy of care, and the nature of other symptoms and disorders.

Stop all alcohol intake avoids any headache, but no harm already done will reverse it. Cirrhosis progresses, leading to severe problems as people begin to drink alcohol— including small doses. If there is a severe problem (such as vomiting blood, fluid build-up inside the liver, or brain deterioration), the outlook is terrible.

Treatment:

Cirrhosis is not cured. The liver is permanently damaged and never again becomes normal.

Therapy includes:

Correction or treatment of the cause, for example, alcohol abuse, drug use, toxin exposure, hemochromatosis or chronic hepatitis

Development of complications

Sometimes a liver is transplanted

The best way to stop cirrhosis is to correct or treat the cause in its earliest stages. Treating the cause generally prevents additional damage and sometimes improves the condition of the person.

Treating causes:

Hepatitis A and B vaccines are given to people unless previously used.

To avoid cirrhosis, people should stop alcohol fully even if the major cause of their liver problem is not alcohol. alcohol (see Alcohol : Treatment). Even in small amounts of alcohol, when cirrhosis is present, can be very harmful to the liver. Symptoms of withdrawal, if present, will be treated.

People should inform their doctor, since they may not be able to process (metabolise) the damaged liver, of every drug they take including over-the-counter drugs, herbal products and dietary supplements. If people are to take medicines metabolised by the liver, significantly smaller doses are used to prevent further liver damage. People may also take a medicine which can damage the liver and thereby cause cirrhosis. These medicines are stopped where available, and if necessary another medicine is replaced.

Treating complications:

Treatment includes complications

For fluid build-up (when the cirrhosis has progressed) within the abdomen: sodium restriction in diet as excess sodium can help accumulate fluid. Drugs can contribute to the elimination of excess fluid by increasing urine.

Supplementary vitamins for vitamin deficiencies:

for hepatic encephalopathy: medications to aid in the bowel binding toxins and antibiotics to reduce the number of bacteria that these toxins produce in the gastrointestinal tract.

For bleeding from varicose veins of the digestive tract, beta-blockers reduce blood pressure in the liver vessels and/or apply elastic bands to tie blood vessels

off the bleeding (called endoscopic banding, or ligation)

To place bands, the physicians use a mouth inserted visual tube (endoscope). Unable or unsuccessful to use beta blockers or band ligation, the physician may use one of the procedures following:

Endoscopic injection of cyanoacrylate: Physicians pass through the mouth and digestive tract of an endoscope. They insert cyanoacrylate into the bloody vein as they work with the endoscope. Blood vessel closes with cyanoacrylate, and the blood prevents bleeding.

Retrograde, retro-viral obliteration by balloon: Doctors make a slight incision in the skin on a large vein, usually in the neck or in the groin, after administering local anaesthetics. Then they inject into the vein and thread the tube to the bleeding site with a narrow, flexible tube (catheter). The ball is restricting blood supply. Injected into or close the vein will avoid bleeding and block a fluid that allows the scar tissue to form.

Transplantation of liver:

Liver transplantation may be performed with eligible applicants. When the transplant completes, the transplanted liver usually performs, and the liver disease signs should stop. For patients with progressive cirrhosis or hepatic cancer, liver transplantation may save life. Liver transplantation typically takes place on the basis of how likely patients will die if a liver is not transplanted.

Liver cirrhosis in asthma:

Three cases with bronchial asthma-associated primary Liver cirrhosis:

Three patients were found to be associated with primary biliary cirrhosis (PBC) and bronchial asthma. Many of these patients were female (53, 54, and 41 years), and had mitochondrial antibodies positive. Both PBC and bronchial asthma were diagnosed by the patients. Two patients had bronchial asthma prior to PBC, and the other had the opposite order. The patient was mostly due to bronchial asthma with the clinical signs. The third patient complained of pruritus in two patients with asymptomatic PBC. In addition to the ductal and hepatic parenchymal modifications typical of PBC, hepatic histology revealed mild to moderate eosinophilic infiltration. A study performed by 266 PBC cases showed that in six of them, bronchial asthma was associated with PBC while in 166 viral hepatitis patients no material associated with bronchial asthma was identified in the liver biopsy files of our patients. Our knowledge with 3 cases shows that the

list of extra-hepatic disorders associated with PBC may include bronchial asthma. This association's meaning is uncertain and further research may be expected. In these 3 patients bronchial asthma has been used for steroid treatment known to have adverse effects in PBC. In patients with bronchial asthma associated with PBC, another treatment approach may have to be addressed. (Andrea Rambaldi & Gluud, 2019)

Popular asthma medication associated with the prevention of possible liver disease:

Anti-inflammatory sodium's are mostly used to avoid asthma and allergies, but recent studies have shown a potential possible application of this medicine. Analysis reported in the scientific journal *Hepatology* uncovered key results that indicate that the elimination of liver fibrosis may be correlated with anti-inflammatory cromolyn sodium. The study was undertaken jointly by members of the Baylor Scott & White Research Foundation, the Central Texas Veteran Health Care System and the Texas A&M Health Sciences Centre. The study showed that cromolyn sodium blocks sequence of cells known to cause hepatic fibrosis (scarring), which can lead to hepatic cirrhosis. Researcher also assessed the invasion and proliferation of mast cells that result in liver fibrosis and release of histamine. Researchers also found that the medication has successfully blocked the fibrosis causing histamine, using a model that imitates human primary sclerosing cholangitis (PCS). (Volk, 2018)

PCS is a chronic condition causing severe damage to the bile ducts and causing hepatic damage, such as long lasting damage or disability as well as substance misuse. As a consequence, hepatic scars and swells; over time, hepatitis, cancer or tumour may lead to hepatic failure. PCS is not easily treated and patients also require liver transplantation. AstraZeneca, a common medicine for the prevention of asthma attacks, can cause serious liver damage in some users. To be healthy, the medications – particularly the women – should be checked routinely with blood checks. Quan, Assistant Pharmacy Professor of Pharmacy at University of California, San Francisco, reports that three oral asthma women have suffered significant hepatic damage for several months (UCSF). Frank Casty, MD, Executive Director of AstraZeneca's Respiratory Drugs, says the medication is generally well absorbed. Since it was introduced in 1996, more than 1 million users have been handled with it. (Yamamoto, 2017)

Heater L. Bradley-Francis, PhD researcher at the Baylor Scott and White Health Research Centre, static press release: "We have been researching mast cells for several years in my workshop and finding that they become more prevalent and active during the illness, and so the ultimate aim of my research is to identify and inactive medicines for the targeting of mast cells. Although the findings show promise, further testing is needed to confirm the initial results of the study and to decide if the cromolyn-aid treatment will be provided to patients in the future in an attempt to minimise the need for liver transplants to avoid fibrosis.

CONCLUSION:

Liver cirrhosis in asthma Three cases with bronchial asthma-associated primary Liver Cirrhosis Three patients were found to be associated with primary biliary cirrhosis (PBC) and bronchial asthma. A study performed by 266 PBC cases showed that in six of them, bronchial asthma was associated with PBC while in 166 viral hepatitis patients no material associated with bronchial asthma was identified in the liver biopsy files of our patients. Popular asthma medication associated with the prevention of possible liver disease Anti-inflammatory sodium's are mostly used to avoid asthma and allergies, but recent studies have shown a potential possible application of this medicine.

REFERENCES:

1. Bjelac, J., Patil, D., & Radojicic, C. (2016). P212 Liver cirrhosis and weight loss as presenting features of systemic mastocytosis. *Annals of Allergy, Asthma & Immunology*, 117(5), S85. <https://doi.org/10.1016/j.anai.2016.09.224>
2. CATES, H. B. (2018). RELATION OF LIVER FUNCTION TO CIRRHOSIS OF LIVER AND TO ALCOHOLISM. *Archives of Internal Medicine*, 67(2), 383. <https://doi.org/10.1001/archinte.1941.00200020145009>
3. Fukui, H. (2020). Leaky Gut and Gut-Liver Axis in Liver Cirrhosis: Clinical Studies Update. *Gut and Liver*. <https://doi.org/10.5009/gnl20032>
4. Furlan, A., & Borhani, A. A. (2018). Problematic lesions in cirrhosis. *Clinical Liver Disease*, 11(2), 43–47. <https://doi.org/10.1002/cld.689>
5. Kalaitzakis, E., & Bjornsson, E. (2019). 263 Coronary Artery Disease in Liver Cirrhosis: A Comparison Between NASH-Related Cirrhosis, Alcoholic Cirrhosis and Cirrhosis Due to Other Etiologies. *Gastroenterology*, 136(5), A-796. [https://doi.org/10.1016/s0016-5085\(09\)63673-8](https://doi.org/10.1016/s0016-5085(09)63673-8)
6. Matkovska, N. (2020). Features of the State of Internal Organs and the Structure of Comorbidity in Deceased Persons With Alcoholic Liver Cirrhosis, Non-alcoholic Fatty Liver Disease at the Cirrhosis Stage and Alcoholic Liver Cirrhosis Associated With Insulin Resistance and Obesity. *Lviv Clinical Bulletin*, 2(30), 35–45. <https://doi.org/10.25040/lkv2020.02.035>
7. Rambaldi, A., & Glud, C. (2017). Colchicine for alcoholic and non-alcoholic liver fibrosis and cirrhosis. *Liver*, 20(3), 262–266. <https://doi.org/10.1034/j.1600-0676.2000.020003262.x>
8. Rambaldi, Andrea, & Glud, C. (2019). Colchicine for alcoholic and non-alcoholic liver fibrosis or cirrhosis. *Liver*, 21(2), 129–136. <https://doi.org/10.1034/j.1600-0676.2001.021002129.x>
9. Volk, M. L. (2018). Hospital readmissions for decompensated cirrhosis. *Clinical Liver Disease*, 4(6), 138–140. <https://doi.org/10.1002/cld.420>
10. Yamamoto, K. (2017). MORPHOLOGICAL STUDIES OF THE SPLEEN IN SPLENOMEGALIC LIVER CIRRHOSIS COMPARING WITH THE SPLEEN IN IDIOPATHIC PORTAL HYPERTENSION (SO-CALLED BANTI'S SYNDROME WITHOUT LIVER CIRRHOSIS). *Pathology International*, 28(6), 891–905. <https://doi.org/10.1111/j.1440-1827.1978.tb01278.x>