Acute Liver Failure with cirrhosis

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The presence of liver cirrhosis can have a major impact on pharmacodynamics and pharmacokinetics, but guidance for prescribing is lacking. Objective: The aim of this study is to provide an overview of evidence-based recommendations developed for the safe use of drugs in liver cirrhosis. Methods: Recommendations were based on a systematic literature search combined with expert opinion from a panel of 10 experts. The safety of each drug was classified as safe, no additional risks known, additional risks known, unsafe, unknown or the safety class was dependent on the severity of liver cirrhosis (Child-Pugh classification). If applicable, drug-specific dosing advice was provided. All recommendations were implemented in clinical decision support systems and on a website. Results: We formulated 218 recommendations for a total of 209 drugs. For nine drugs, two recommendations were formulated for different administration routes or indications. Drugs were classified as 'safe' in 29 recommendations (13.3%), 'no additional risks known' in 60 (27.5%), 'additional risks known' in 3 (1.4%), and 'unsafe' in 30 (13.8%). In 57 (26.1%) of the recommendations, safety depended on the severity of liver cirrhosis and was 'unknown' in 39 (17.9%) recommendations. Large alterations in pharmacodynamics were the main reason for classifying a drug as 'unsafe'. For 67 drugs (31%), a dose adjustment was needed. Conclusions: Over 200 recommendations were developed for the safe use of drugs in patients with liver cirrhosis. Implementing these recommendations into clinical practice can possibly enhance medication safety in this vulnerable patient group.

Acute liver failure is defined as severe acute liver injury for fewer than twenty-six weeks duration with encephalopathy and impaired synthetic function (INR of 1.5 or higher) in a patient without cirrhosis or preexisting liver disease.

INTORODUCTION

Acute liver failure is a rare disease defined by jaundice, coagulopathy, and hepatic encephalopathy. The etiology and the interval from onset of jaundice to the development of encephalopathy have a significant impact on prognosis.

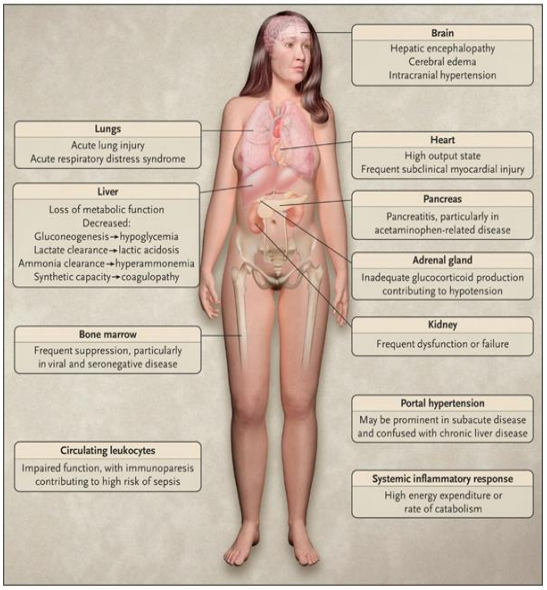
Acute liver failure (ALF) is a complex clinical syndrome characterized by coagulopathy, elevated liver biochemistry, and hepatic encephalopathy without underlying chronic liver disease. It is divided into hyperacute liver failure (within 7 days), acute (1 to 4 weeks) and subacute (5 to 12 weeks).

Acute liver failure (ALF) is a rare and often heterogeneous presentation of severe liver dysfunction in a patient with otherwise no pre-existing liver disease. Though it has high morbidity and mortality, its overall survival has improved through intensive care management and emergency liver transplantation advancements. A high index of suspicion, early referral to a specialist liver transplantation center, and adequate supportive management remain the cornerstone for the management of ALF. Future better understanding and knowledge of the pathophysiology of liver injury and management of multi-organ failure will help improve outcomes.

Cirrhosis is scarring of the liver caused by continuous, long-term liver damage. Scar tissue replaces healthy tissue in the liver and prevents the liver from working properly. The damage caused by cirrhosis can't be reversed and can eventually become so extensive that your liver stops functioning.

- Risk factors
- Symptoms
- Complications
- Prevention
- Management
- Risk factors
- Symptoms
- Complications
- Prevention
- Management
- Patient Details
- Outcomes
- Mechanism Of Action

DISCUSSION



Risk factors :

you are at risk for acute liver failure if you: Take too much acetaminophen. Have certain diseases or infections, such as hepatitis, Wilson disease, and herpes simplex virus. Drink a lot of alcohol.

Factors that may increase your risk of liver disease include:

- Heavy alcohol use.
- Obesity.
- Type 2 diabetes.
- Tattoos or body piercings.
- Injecting drugs using shared needles.
- Blood transfusion before 1992.
- Exposure to other people's blood and body fluids.
- Unprotected sex.

Excessive alcohol consumption is a risk factor for cirrhosis. Being overweight. Being obese increases your risk of conditions that may lead to cirrhosis, such as nonalcoholic fatty liver disease and nonalcoholic steatohepatitis. Having viral hepatitis.

The rarity of ALF and its unpredictable Symptoms :

ALF is called a "silent killer". Most people with ALF are unaware of the problem because itmay have no warning signs or symptoms. For this reason, it is essential that blood pressure is measured regularly.

When symptoms do occur, they can include early morning headaches, nosebleeds, irregular heart rhythms, vision changes, and buzzing in the ears. Severe ALF can cause fatigue, nausea, vomiting, confusion,anxiety, chest pain, and muscle tremors.

The only way to detect ALF is to have a health professional measure blood pressure. Having blood pressure measured is quick and painless. Although individuals can measure their own blood pressure using automated devices, an evaluation by a health professional is important for assessment of risk and associated conditions.

Signs and symptoms of acute liver failure may include, severe coursemake it a challenging entity for prospective studies. ALF is difficult to identify in its early stages, resulting in frequent delays in initiation of treatment. Deliberate decision- making is often impossible.

- Yellowing of your skin and eyeballs (jaundice)
- Pain in your upper right abdomen.
- A swollen belly (ascites)
- Nausea.
- Vomiting.
- A general sense of feeling unwell (malaise)
- Disorientation or confusion.
- Sleepiness.
- Any of the following symptoms necessitate immediate medical attention.
- Jaundice or yellowing of the eyes or skin.
- Pain and distention of the abdomen due to the release of fluid from the liver.
- Swelling of the lower legs due to fluid retention.
- Confusion or forgetfulness. ...
- Dark-colored urine.
- Pale-colored stool.
- If signs and symptoms of liver disease do occur, they may include:
- Skin and eyes that appear yellowish (jaundice)
- Abdominal pain and swelling.
- Swelling in the legs and ankles.
- Itchy skin.
- Dark urine color.
- Pale stool color.
- Chronic fatigue.
- Nausea or vomiting.

❖ Complications :

Acute liver failure often causes complications,

including: Too much fluid in the brain (cerebral edema). Too much fluid causes pressure to build up in your brain, which can lead to disorientation, severe mental confusion and seizures. Bleeding and bleeding disorders.

Portal hypertension is a common complication of cirrhosis and, less commonly, alcoholic hepatitis. It occurs when the blood pressure inside your liver has risen to a potentially serious level. When the liver becomes severely scarred, it's harder for blood to move through it.

Cirrhosis of the liver leads to raised portal pressure, which can cause esophageal or gastric varices. Esophageal variceal bleeding is the most common life-threatening complication of CLD.

- High blood pressure in the veins that supply the liver. This condition is known as portal hypertension. ...
- Swelling in the legs and abdomen. ...
- Enlargement of the spleen. ...
- Bleeding. ...
- Infections. ...
- Malnutrition. ...
- Buildup of toxins in the brain. ...
- Jaundice.

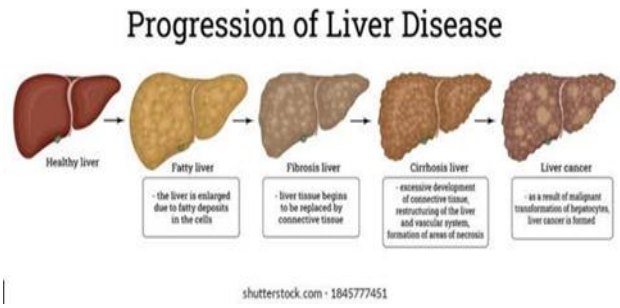
❖ Prevention :

- Reducing salt intake (to less than 5g daily).
- Eating more fruit and vegetables.
- Being physically active on a regular basis.
- Avoiding use of tobacco.
- Reducing alcohol consumption.
- Limiting the intake of foods high in saturated fats.
- Eliminating/reducing trans fats in diet.

❖ Management :

- Reducing and managing stress.
- Regularly checking blood pressure.
- Treating high blood pressure.
- Managing other medical conditions.
- Intravenous (IV) fluids to maintain blood pressure.
- Medications such as laxatives or enemas to help flush toxins (poisons) out.
- Blood glucose (sugar) monitoring. Your provider will give you glucose if your blood sugar drops.
- Drink alcohol sparingly, if at all.
- Avoid red meat, trans fats, processed carbohydrates and foods with high-fructose corn syrup.
- Exercise 30 to 60 minutes around three to four times a week at a moderate intensity.

CASE STUDY



Patient Details:-
Name - Mr/Mrs. XYZ
Age -62 Years
Weight - 65 Kg
Sex – male
Blood Group – ‘A’ Rh Positive
Address – SHAHU NAGER, NEAR VITTHAL MANDIAR BEED
D.O.C.– 08/05/2023
Hospital Name - Beed Dhoot Hospital, Beed.
Consultant Doctor – Dr. Pradeep Dhut [M.B.B.S., MD Medicine.]
Social Hisory - No
Obese/Non Obese - Non Obese
Vegeterian /Non Veg./Mix.Veg. - Mix Vegetarian
Family History – No.
Other Details – worker.
Present Complaints – Acute liver failure with cirrhosis
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On Examination – cirrhosis
Past Medical History – No

Case Study:-
A 62 year old male, worker visited Services Dhoot Hospital Beed with the complaints of excessive Chest Pain, sudden Nausea Vomiting, muscle tremor, increased thirst, fatigue and excessive sweating. She was experiencing these conditions from last Few months.

❖ Treatment:

1.TAB. METPURE H
2.TAB. CONSIVAS 10
3.TAB. CIPLAR 10
4.TAB.RIFAGUT 400
5.TAB.LASILACTONE
6.TAB.LIV 52
7.SYP. DUPHLAC

❖ Drug Interaction:- was checked,

No Interaction was present between Drug names

❖ Care Plan :-

Reduce sodium (salt) — Reducing the amount of sodium you consume can lower blood pressure if you havehypertension or elevated blood pressure.

- Proper diet ---low Oily Food intake Exercise and walk to reduce body weight
- Check blood pressure time to time with doctor suggestion / consulting.
- Monitor level of consciousness, blood pressure, volume status, blood and coagulation tests, and signs and symptoms.

evaluate patients' history, check current status of ascites and edema, and plan future care to prevent recurrence.

❖ Outcomes :-

Patient used the suggested medicine twice a day after using medicine the blood pressure level of the patient was monitired.

Patient was advised to visit hospital if she suffers any side effect in future or, if her symptoms not properly treated.

The outcome was acute treatment of an elevated BP, defined as administration of an IV antihypertensive or a new pharmacologic class of oral antihypertensive. Medication that was initially prescribed before admission was considered a continuation of outpatient therapy rather than treatment of a specific BP. The BP reading immediately before treatment was considered the treated measure. At the patient level, we identified a singlemeasurement as the index BP for purposes of determining subsequent outcomes: for treated patients, it was the highest treated BP; for untreated patients, it was the highest BP during admission. Index BPs were then matched using both patient and blood pressure characteristics.

❖ Mechanism Of Action :

Metoprolol Succinate

Metoprolol is a cardioselective beta-1-adrenergic receptor inhibitor that competitively blocks beta1-receptors with minimal or no effects on beta-2 receptors at oral doses of less than 100 mg in adults. It decreases cardiac output by negative inotropic and chronotropic effects

Rosuvastatin

Rosuvastatin is in a class of medications called HMG-CoA reductase inhibitors (statins). It works by slowingthe production of cholesterol in the body to decrease the amount of cholesterol that may build up on the wallsof the arteries and block blood flow to the heart, brain, and other parts of the body.

Rifaximin 400

Used in treatment of hepatic encephalopathy, in liver disease, there is an increased growth of bacteria in the intestine which incerese the load of toxins travelling through the body. this further increases the possibility of toxins reaching the brain which can cause abnormal brain funcation. tablet shows down the growth of bacteria in the gut, decrasing the symptoms in cases of liver disese.

furosemide (20mg) +Spironolacton (50mg)

Lasilactone 50 Tablet is a combination of two medicines: Furosemide and Spironolactone. Furosemide is a diuretic which removes extra water and certain electrolytes from the body through urine. Over time, it also relaxes blood vessels, but causes potassium loss. Spironolactone is also a diuretic which conserves potassium, thereby balancing its levels in the body.

Liv 52 is a herbal formulation that exhibits potent hepatoprotective properties that protect against chemically-induced hepatotoxicity. It helps restore the liver's functional efficiency by protecting the parenchyma and promoting hepatocellular regeneration. The tablet prevents the loss of functional integrity of the cell membrane, maintains cytochrome P-450, fastens the recovery period, and ensures the restoration of hepatic functions.

DISCUSSION

Acute liver failure is loss of liver function that occurs quickly — in days or weeks — usually in a person who has no preexisting liver disease. It's most commonly caused by a hepatitis virus or drugs, such as acetaminophen. Acute liver failure is less common than chronic liver failure, which develops more slowly.

Patient suffering from cirrosis due to many reasons, included of the infection of Hepataties C rise in blood pressure, majority of Hypertension patient suffering from this due to their genetic and family history. If this condition is not properly treated or is for long term it results in liver disease, shock, permanent damage to liver.

ALF patient should properly manage his/her daily dietary intake because if patient is taking salt, oily food agents as medication and not taking diet according to body need then he/she may suffer from encefalopathy state that can be more dangerous than the ALF. Small meals should be taken 4 to 5 timein a day instead of eating a lot at single time. and Geoffrey Gurtner.

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