### Supplementary Table 1. Grading of the responses from the ChatGPT Language Model for cirrhosis-related questions

<table>
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<tr>
<th>Questions</th>
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<tbody>
<tr>
<td>Basic Knowledge</td>
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<tr>
<td>1. What is cirrhosis?</td>
<td>Cirrhosis is a type of chronic liver disease that occurs when scar tissue replaces healthy liver tissue. This scar tissue is the result of long-term damage to the liver, which can be caused by a variety of factors, including chronic alcohol abuse, viral hepatitis, and nonalcoholic fatty liver disease. The liver is an essential organ that performs many important functions, including filtering toxins from the blood, producing bile to aid in digestion, and storing vitamins and minerals. When the liver is damaged, it becomes scarred and is unable to function properly. This can lead to a variety of complications, such as liver failure, liver cancer, and portal hypertension. Symptoms of cirrhosis may include fatigue, weakness, weight loss, abdominal pain and swelling, and jaundice (a yellowing of the skin and whites of the eyes). Cirrhosis is a serious condition that can be life-threatening if left untreated. Treatment for cirrhosis may include lifestyle changes, medications, and surgery.</td>
<td>Similar</td>
<td>2</td>
<td>2</td>
<td>N/A</td>
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<tr>
<td>2. What is decompensated cirrhosis?</td>
<td>Decompensated cirrhosis is a stage of liver disease in which the liver is unable to adequately perform its functions due to scarring (cirrhosis) and damage. When the liver is decompensated, it is unable to adequately filter toxins from the blood, produce proteins, and regulate the body’s metabolism and blood clotting. This can lead to a range of complications, such as liver failure, bleeding, and infections. Symptoms of decompensated cirrhosis may include fatigue, loss of appetite, weight loss, abdominal swelling, spider-like blood vessels on the skin, jaundice (yellowing of the skin and whites of the eyes), confusion or changes in mental status, and fluid accumulation in the abdomen (ascites). Treatment for decompensated cirrhosis may include medications to control symptoms, lifestyle changes to reduce the strain on the liver, and, in some cases, liver transplantation. It is important for people with decompensated cirrhosis to receive timely and appropriate treatment to prevent further damage to the liver and to prevent complications.</td>
<td>Similar</td>
<td>1</td>
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### Questions

#### Responses 1

- **Cirrhosis** is a progressive disease that can cause a variety of symptoms, including:
  - **Fatigue**: People with cirrhosis often feel tired and weak.
  - **Loss of appetite**: Cirrhosis can cause a loss of appetite, which can lead to weight loss.
  - **Nausea and vomiting**: These symptoms may be caused by the accumulation of toxins in the body due to liver damage.
  - **Abdominal pain**: Cirrhosis can cause abdominal pain due to the build-up of fluid in the abdomen (ascites).
  - **Itching**: Cirrhosis can cause itching due to the build-up of bile in the skin.
  - **Yellowing of the skin and whites of the eyes (jaundice)**: This is caused by the accumulation of bilirubin in the body due to liver damage.
  - **Abdominal pain**: Cirrhosis can cause abdominal pain due to the build-up of fluid in the abdomen (ascites).
  - **Itching**: Cirrhosis can cause itching due to the build-up of bile in the skin.
  - **Yellowing of the skin and whites of the eyes (jaundice)**: This is caused by the accumulation of bilirubin in the body due to liver damage.
  - **Confusion and difficulty thinking**: Cirrhosis can cause confusion and difficulty thinking due to the accumulation of toxins in the brain.
  - **Spider-like blood vessels on the skin**: These are small, dilated blood vessels that may appear on the skin due to increased pressure in the veins.
  - **Bruising and bleeding easily**: Cirrhosis can cause bruising and bleeding easily due to a decrease in the production of clotting factors by the damaged liver.

It’s important to note that some people with cirrhosis may not have any symptoms in the early stages of the disease. It’s also possible for symptoms to come and go, or to vary in severity over time. If you have any concerns about your health, it’s important to speak with a healthcare provider.

#### Responses 2

- **Cirrhosis** is a progressive disease that can cause a variety of symptoms, including:
  - **Fatigue**: People with cirrhosis often feel tired and weak.
  - **Loss of appetite**: Cirrhosis can cause a loss of appetite, which can lead to weight loss.
  - **Nausea and vomiting**: These symptoms may be caused by the accumulation of toxins in the body due to liver damage.
  - **Abdominal pain**: Cirrhosis can cause abdominal pain due to the build-up of fluid in the abdomen (ascites).
  - **Itching**: Cirrhosis can cause itching due to the build-up of bile in the skin.
  - **Yellowing of the skin and whites of the eyes (jaundice)**: This is caused by the accumulation of bilirubin in the body due to liver damage.
  - **Confusion and difficulty thinking**: Cirrhosis can cause confusion and difficulty thinking due to the accumulation of toxins in the brain.
  - **Spider-like blood vessels on the skin**: These are small, dilated blood vessels that may appear on the skin due to increased pressure in the veins.
  - **Bruising and bleeding easily**: Cirrhosis can cause bruising and bleeding easily due to a decrease in the production of clotting factors by the damaged liver.

It’s important to note that some people with cirrhosis may not have any symptoms in the early stages of the disease. It’s also possible for symptoms to come and go, or to vary in severity over time. If you have any concerns about your health, it’s important to speak with a healthcare provider.

### Similar

- **Cirrhosis** is a serious and potentially life-threatening condition that occurs when scar tissue replaces healthy liver tissue, disrupting the normal structure and function of the liver. It can be caused by a variety of factors, including chronic alcohol abuse, viral hepatitis, and nonalcoholic fatty liver disease.

The prevalence of cirrhosis varies depending on the population being studied and the specific cause of the condition. According to the World Health Organization (WHO), cirrhosis is the 12th leading cause of death globally and is responsible for approximately 1.3 million deaths each year. In the United States, the prevalence of cirrhosis is estimated to be between 0.5% and 1% of the population, with the highest rates seen in middle-aged men. Nonalcoholic fatty liver disease is the most common cause of cirrhosis in the US, followed by hepatitis C and alcohol abuse.

### Reviewer 1 grades

1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

### Reviewer 2 grades

1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

### Reviewer 3 grades for the responses with discrepancies

1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

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</thead>
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<tr>
<td>3. What are the symptoms of cirrhosis?</td>
<td>Cirrhosis is a progressive disease that can cause a variety of symptoms, including: Fatigue: People with cirrhosis often feel tired and weak. Loss of appetite: Cirrhosis can cause a loss of appetite, which can lead to weight loss. Nausea and vomiting: These symptoms may be caused by the accumulation of toxins in the body due to liver damage. Abdominal pain: Cirrhosis can cause abdominal pain due to the build-up of fluid in the abdomen (ascites). Itching: Cirrhosis can cause itching due to the build-up of bile in the skin. Yellowing of the skin and whites of the eyes (jaundice): This is caused by the accumulation of bilirubin in the body due to liver damage. Swelling in the legs: This is caused by the build-up of fluid in the legs (edema) due to liver damage. Confusion and difficulty thinking: Cirrhosis can cause confusion and difficulty thinking due to the accumulation of toxins in the brain. Spider-like blood vessels on the skin: These are small, dilated blood vessels that may appear on the skin due to increased pressure in the veins. Bruising and bleeding easily: Cirrhosis can cause bruising and bleeding easily due to a decrease in the production of clotting factors by the damaged liver. It’s important to note that some people with cirrhosis may not have any symptoms in the early stages of the disease. It’s also possible for symptoms to come and go, or to vary in severity over time. If you have any concerns about your health, it’s important to speak with a healthcare provider.</td>
<td>Similar</td>
<td>1</td>
<td>2</td>
<td>1</td>
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<tr>
<td>4. How common is cirrhosis?</td>
<td>Cirrhosis is a serious and potentially life-threatening condition that occurs when scar tissue replaces healthy liver tissue, disrupting the normal structure and function of the liver. It can be caused by a variety of factors, including chronic alcohol abuse, viral hepatitis, and nonalcoholic fatty liver disease. The prevalence of cirrhosis varies depending on the population being studied and the specific cause of the condition. According to the World Health Organization (WHO), cirrhosis is the 12th leading cause of death globally and is responsible for approximately 1.3 million deaths each year. In the United States, the prevalence of cirrhosis is estimated to be between 0.5% and 1% of the population, with the highest rates seen in middle-aged men. Nonalcoholic fatty liver disease is the most common cause of cirrhosis in the US, followed by hepatitis C and alcohol abuse.</td>
<td>Similar</td>
<td>1</td>
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Questions | Responses 1 | Responses 2 | Reviewer 1 grades | Reviewer 2 grades | Reviewer 3 grades for the responses with discrepancies
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5. Who is more likely to get cirrhosis? | Cirrhosis is a serious liver condition that occurs when healthy liver tissue is replaced with scar tissue. This can lead to liver failure and other serious health problems. There are a number of factors that can increase a person's risk of developing cirrhosis, including: Alcohol abuse: Excessive alcohol consumption is a major cause of cirrhosis. Hepatitis: Chronic infection with the hepatitis B or C virus can cause cirrhosis. Nonalcoholic fatty liver disease (NAFLD): This condition, which is caused by a buildup of excess fat in the liver, can lead to cirrhosis in some people. Genetic factors: Some people may be more prone to developing cirrhosis due to genetic factors. Other medical conditions: Certain medical conditions, such as cystic fibrosis and Wilson's disease, can increase the risk of cirrhosis. It is important to note that anyone can develop cirrhosis, but some people may be more at risk due to the factors listed above. It is important to reduce your risk of cirrhosis by avoiding excessive alcohol consumption, getting vaccinated against hepatitis B, and taking steps to prevent or manage medical conditions that increase your risk. | Similar | 1 | 2 | 1
6. What vaccines are needed in people with cirrhosis? | Cirrhosis is a serious condition that is caused by long-term damage to the liver. People with cirrhosis are at increased risk of serious complications from certain infections, so it is important for them to be up to date on their vaccinations. The specific vaccines that are recommended for people with cirrhosis will depend on several factors, including their age, overall health, and their risk of exposure to certain infections. However, some vaccines that are often recommended for people with cirrhosis include: Influenza (flu) vaccine: People with cirrhosis are at increased risk of serious complications from the flu, so it is important for them to get vaccinated each year. Pneumococcal vaccine: This vaccine helps to protect against pneumonia and other infections caused by the pneumococcal bacteria. It is usually recommended for people with cirrhosis, especially those who are over the age of 65 or have certain other risk factors. Hepatitis A and B vaccines: These vaccines help to protect against hepatitis A and hepatitis B, which are viral infections that can cause serious liver damage. People with cirrhosis are at increased risk of complications from these infections, so it is important for them to be vaccinated. Tetanus and diphtheria (Td) vaccine: This vaccine helps to protect against tetanus and diphtheria, which are serious bacterial infections. It is usually recommended for all adults, including those with cirrhosis. Zoster (shingles) vaccine: This vaccine helps to protect against shingles, which is a painful skin rash caused by the herpes zoster virus. It is usually recommended for adults over the age of 50, including those with cirrhosis. It is important to talk to your healthcare provider about which vaccines are recommended for you, as your specific vaccination needs may vary depending on your individual circumstances. | Similar | 3 | 2 | 2

Supplementary Table 1. Continued

http://www.e-cmh.org

https://doi.org/10.3350/cmh.2023.0089
### Questions
7. Why are vaccinations important for cirrhosis?

Vaccinations are important for people with cirrhosis because they can help prevent infections that can be more serious or even life-threatening in people with weakened immune systems. Cirrhosis is a condition in which the liver becomes scarred and is unable to function properly. It can be caused by a number of things, including chronic alcohol abuse, viral hepatitis, and nonalcoholic fatty liver disease.

People with cirrhosis often have a weakened immune system, which means they are more susceptible to infections. Vaccinations can help protect against some of the most common and serious infections that can occur in people with cirrhosis, such as pneumonia, influenza, and hepatitis A and B.

It’s important to talk to your healthcare provider about which vaccinations are recommended for you if you have cirrhosis. They will be able to provide you with information about the benefits and potential risks of each vaccination and help you make an informed decision about which ones to get.

8. How much alcohol does it take before causing liver damage?

The amount of alcohol that can cause liver damage varies from person to person and depends on several factors, including:

- The amount of alcohol consumed: Heavy drinking, defined as more than 3 drinks per day for women and more than 4 drinks per day for men, can lead to liver damage over time.
- Body weight: Larger people generally have more body mass to dilute the alcohol, so they can tolerate more alcohol before it starts to cause damage.
- Age: Older people may be more sensitive to the effects of alcohol and may be at increased risk of liver damage.
- Gender: Women may be more susceptible to alcohol-related liver damage than men, even if they drink the same amount of alcohol.
- Family history: People with a family history of alcohol abuse or liver disease may be more prone to liver damage from alcohol.

It’s important to note that any amount of alcohol can be harmful to the liver in the long term, and it’s best to drink in moderation or not at all. The Centers for Disease Control and Prevention (CDC) recommends that women limit their alcohol intake to one drink per day, and men to two drinks per day. One drink is defined as 12 ounces of beer, 5 ounces of wine, or 1.5 ounces of 80-proof distilled spirits.

### Reviewer grades for the responses with discrepancies

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<td>7. Why are vaccinations important for cirrhosis?</td>
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<td>8. How much alcohol does it take before causing liver damage?</td>
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<tr>
<td>1. Comprehensive</td>
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<td>2. Correct but inadequate</td>
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Questions | Responses 1 | Responses 2 | Reviewer 1 grades | Reviewer 2 grades | Reviewer 3 grades for the responses with discrepancies
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9. What is Hepatitis? | Hepatitis is a general term that refers to an inflammation of the liver. The liver is a vital organ that plays a key role in many of the body's functions, including processing nutrients, producing bile, and removing toxins from the body. Hepatitis can be caused by a variety of factors, including viral infections, alcohol abuse, and certain medications. There are several types of hepatitis, including hepatitis A, B, C, D, and E. Each type is caused by a different virus and can have different symptoms, modes of transmission, and treatment options. Hepatitis A is caused by the hepatitis A virus (HAV) and is typically transmitted through contaminated food or water. It can also be transmitted through close personal contact with an infected person. Hepatitis A can be prevented through vaccination. Hepatitis B is caused by the hepatitis B virus (HBV) and is transmitted through contact with blood or other bodily fluids from an infected person. This can occur through sexual contact, sharing needles or other injection drug use equipment, or exposure to contaminated blood or blood products. Hepatitis B can be prevented through vaccination. Hepatitis C is caused by the hepatitis C virus (HCV) and is transmitted through contact with blood from an infected person. This can occur through sharing needles or other injection drug use equipment, or exposure to contaminated blood or blood products. Hepatitis C can be treated with antiviral medications. Hepatitis D is caused by the hepatitis D virus (HDV) and can only occur in people who are already infected with hepatitis B. It is transmitted through contact with blood or other bodily fluids from an infected person. Hepatitis E is caused by the hepatitis E virus (HEV) and is transmitted through contaminated food or water. It is more common in developing countries and is typically self-limiting, meaning it goes away on its own without treatment. Symptoms of hepatitis can include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, clay-colored bowel movements, joint pain, and jaundice (yellowing of the skin and whites of the eyes). In some cases, hepatitis can lead to more serious complications, such as liver failure or liver cancer. If you think you may have hepatitis, it is important to see a healthcare provider for proper diagnosis and treatment. | Similar | 2 | 1 | 2
Questions

10. How to slow or reverse cirrhosis?

Cirrhosis is a serious and irreversible condition that occurs when scar tissue replaces healthy liver tissue. It is often the result of long-term damage to the liver from conditions such as alcohol abuse, hepatitis, or nonalcoholic fatty liver disease.

There is no cure for cirrhosis, and the damage it causes to the liver is permanent. However, it is possible to slow the progression of the disease and prevent further damage to the liver by making lifestyle changes and receiving appropriate medical treatment. Here are some steps that may help:

Stop drinking alcohol: If you have cirrhosis due to alcohol abuse, it is important to stop drinking alcohol completely. This will help to prevent further damage to your liver.

Eat a healthy diet: A healthy diet that is low in salt and fat can help to reduce the strain on your liver and improve your overall health.

Exercise regularly: Regular exercise can improve your overall health and help to reduce the risk of complications from cirrhosis.

Get vaccinated: Vaccines can protect you from certain types of hepatitis, which is a common cause of cirrhosis.

Take medications as prescribed: If you have been prescribed medications to treat your cirrhosis or any underlying condition, be sure to take them as directed by your healthcare provider.

Avoid exposure to toxins: Certain substances, such as pesticides and certain types of medications, can be harmful to the liver. Avoid exposure to these substances as much as possible.

Monitor your health: Regular check-ups with your healthcare provider can help to identify any complications or new problems that may be developing.

It is important to note that these steps may help to slow the progression of cirrhosis, but they cannot reverse the damage that has already been done to the liver. If you have cirrhosis, it is important to work closely with your healthcare provider to manage your condition and prevent complications.

Supplementary Table 1. Continued

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<td>10. How to slow or reverse cirrhosis?</td>
<td>Cirrhosis is a serious and irreversible condition that occurs when scar tissue replaces healthy liver tissue. It is often the result of long-term damage to the liver from conditions such as alcohol abuse, hepatitis, or nonalcoholic fatty liver disease.</td>
<td>Similar</td>
<td>2</td>
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There is no cure for cirrhosis, and the damage it causes to the liver is permanent. However, it is possible to slow the progression of the disease and prevent further damage to the liver by making lifestyle changes and receiving appropriate medical treatment. Here are some steps that may help:

Stop drinking alcohol: If you have cirrhosis due to alcohol abuse, it is important to stop drinking alcohol completely. This will help to prevent further damage to your liver.

Eat a healthy diet: A healthy diet that is low in salt and fat can help to reduce the strain on your liver and improve your overall health.

Exercise regularly: Regular exercise can improve your overall health and help to reduce the risk of complications from cirrhosis.

Get vaccinated: Vaccines can protect you from certain types of hepatitis, which is a common cause of cirrhosis.

Take medications as prescribed: If you have been prescribed medications to treat your cirrhosis or any underlying condition, be sure to take them as directed by your healthcare provider.

Avoid exposure to toxins: Certain substances, such as pesticides and certain types of medications, can be harmful to the liver. Avoid exposure to these substances as much as possible.

Monitor your health: Regular check-ups with your healthcare provider can help to identify any complications or new problems that may be developing.

It is important to note that these steps may help to slow the progression of cirrhosis, but they cannot reverse the damage that has already been done to the liver. If you have cirrhosis, it is important to work closely with your healthcare provider to manage your condition and prevent complications.

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<tr>
<td>11. What are the complications of cirrhosis?</td>
<td>Cirrhosis is a serious and potentially life-threatening condition that occurs when the liver becomes scarred and damaged. It can lead to a number of complications, including:</td>
<td>Similar</td>
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<td>Ascites: This is the accumulation of fluid in the abdomen, which can cause bloating and discomfort.</td>
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<td>Hepatic encephalopathy: This is a condition in which toxins build up in the blood and affect brain function, leading to symptoms such as confusion, drowsiness, and tremors.</td>
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<td>Variceal bleeding: Cirrhosis can cause the blood vessels in the esophagus and stomach to become enlarged and prone to bleeding.</td>
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<td>Hepatorenal syndrome: This is a type of kidney failure that can occur in people with cirrhosis.</td>
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<td>Infections: People with cirrhosis are more susceptible to infections, such as pneumonia and spontaneous bacterial peritonitis (an infection of the abdomen).</td>
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<td>Hepatocellular carcinoma: This is a type of liver cancer that can occur in people with cirrhosis.</td>
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<td>Liver failure: Cirrhosis can eventually lead to liver failure, which can be life-threatening.</td>
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<td>It's important to manage cirrhosis through a combination of lifestyle changes, medication, and possibly a liver transplant to prevent these complications.</td>
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<td>12. Is cirrhosis a hereditary disease?</td>
<td>Cirrhosis is a condition in which the liver becomes scarred and damaged, leading to impaired function. It can be caused by a variety of factors, including viral hepatitis, alcohol abuse, and nonalcoholic fatty liver disease. While some forms of cirrhosis have a genetic component and may be more common in certain families, in most cases it is not a hereditary disease.</td>
<td>Similar</td>
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<td>In some cases, certain genetic conditions can increase the risk of developing cirrhosis. For example, individuals with certain genetic mutations may be at an increased risk of developing nonalcoholic fatty liver disease, which can lead to cirrhosis. However, these genetic conditions are relatively rare and do not account for the majority of cases of cirrhosis.</td>
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<td>It's important to note that while cirrhosis itself may not be hereditary, certain lifestyle factors that can contribute to its development, such as alcohol consumption and diet, can be influenced by family habits and may be passed down from one generation to the next. Therefore, it is important for individuals to be aware of their family history and to take steps to reduce their risk of developing cirrhosis or other liver diseases. This may include adopting a healthy lifestyle, including a balanced diet and avoiding or limiting alcohol consumption.</td>
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<td>13. Can cirrhosis kill?</td>
<td>Cirrhosis is a serious and potentially life-threatening condition that occurs when scar tissue replaces healthy liver tissue. The scarring that occurs in cirrhosis can interfere with the liver's ability to function properly, leading to a range of complications such as bleeding, infections, and liver failure. In some cases, cirrhosis can be reversible if it is caught early and the underlying cause is treated. However, if the damage to the liver is severe and the person does not receive treatment, cirrhosis can be fatal. The prognosis for someone with cirrhosis will depend on the severity of the condition, the underlying cause, and whether the person receives treatment. It is important for people with cirrhosis to receive medical care and follow their treatment plan to improve their chances of a good outcome. This may include medications, lifestyle changes, and in some cases, a liver transplant.</td>
<td>Similar</td>
<td>1</td>
<td>2</td>
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<tr>
<td>14. Is cirrhosis painful?</td>
<td>Cirrhosis is a serious and often life-threatening condition that occurs when scar tissue replaces healthy liver tissue, leading to liver dysfunction and failure. While cirrhosis itself may not cause pain, many people with cirrhosis experience discomfort or pain due to the complications associated with the condition. For example, some people with cirrhosis may experience abdominal pain due to the build-up of fluid in the abdomen (known as ascites), or they may experience pain in the upper right part of the abdomen due to an enlarged liver. In addition, people with cirrhosis may develop liver cancer, which can cause pain. It is important for people with cirrhosis to seek medical attention if they experience any pain, as it could be a sign of a serious complication.</td>
<td>Similar</td>
<td>1</td>
<td>1</td>
<td>N/A</td>
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<tr>
<td>15. Can cirrhosis cause cancer?</td>
<td>Cirrhosis, a condition in which scar tissue replaces healthy liver tissue, can increase the risk of liver cancer. This is because cirrhosis can cause changes in the liver that can lead to the development of cancer cells. The exact cause of liver cancer is not fully understood, but several factors can increase the risk, including chronic viral hepatitis (such as hepatitis B or C), heavy alcohol consumption, and cirrhosis. People with cirrhosis have an increased risk of developing liver cancer because the scar tissue that forms in the liver as a result of cirrhosis can cause changes in the liver cells that can lead to the development of cancer. It’s important to note that not everyone with cirrhosis will develop liver cancer. However, it’s important for people with cirrhosis to be monitored regularly for any signs or symptoms of liver cancer, such as abdominal pain, a lump or mass in the abdomen, unexplained weight loss, or yellowing of the skin and whites of the eyes (jaundice). Early detection and treatment of liver cancer can improve the chances of a successful outcome.</td>
<td>Similar</td>
<td>1</td>
<td>1</td>
<td>N/A</td>
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16. How to prevent cirrhosis?

Cirrhosis is a serious and potentially life-threatening condition that occurs when scar tissue replaces healthy liver tissue, leading to liver dysfunction. It is often the result of chronic damage to the liver, such as from alcohol abuse, hepatitis, or other chronic liver diseases.

To prevent cirrhosis, it is important to take steps to protect your liver and avoid activities that can damage it. Some ways to do this include:

- Avoiding excessive alcohol consumption: Excessive alcohol consumption is a leading cause of cirrhosis. It is important to limit your alcohol intake or abstain from alcohol completely to reduce your risk of developing cirrhosis.
- Getting vaccinated against hepatitis: Hepatitis B and C are viral infections that can cause chronic liver disease and cirrhosis. Getting vaccinated against hepatitis B and getting tested for hepatitis C can help protect against these infections and reduce your risk of cirrhosis.
- Managing other health conditions: Some health conditions, such as obesity, type 2 diabetes, and nonalcoholic fatty liver disease, can increase your risk of cirrhosis. It is important to manage these conditions and maintain a healthy lifestyle to reduce your risk.
- Avoiding risky behaviors: Engaging in risky behaviors, such as sharing needles or engaging in unprotected sex, can increase your risk of hepatitis and other infections that can lead to cirrhosis. It is important to practice safe behaviors to reduce your risk.
- Getting regular check-ups: Regular check-ups with your healthcare provider can help identify any potential liver issues early on, allowing for timely treatment and management to reduce the risk of cirrhosis.

17. Is cirrhosis reversible?

Cirrhosis is a type of liver disease that is characterized by scarring of the liver tissue. In advanced stages, cirrhosis can lead to serious complications such as liver failure, portal hypertension, and liver cancer.

In some cases, cirrhosis may be reversible if it is caught early and the underlying cause is treated effectively. For example, if the cause of cirrhosis is alcohol abuse, abstaining from alcohol and getting treatment for alcohol dependence may halt the progression of the disease and potentially reverse it. However, if the disease has progressed to advanced stages, it may not be reversible.

It is important to seek medical attention if you are experiencing symptoms of cirrhosis or if you are at risk for developing the disease due to certain lifestyle factors or underlying medical conditions. Early diagnosis and treatment can improve your chances of a successful outcome.

Cirrhosis is a condition in which the liver becomes scarred and damaged, leading to a loss of its normal structure and function. It is generally considered to be a progressive and irreversible condition, meaning that it typically gets worse over time and cannot be reversed. However, it is possible to slow the progression of cirrhosis and improve symptoms through early diagnosis and treatment of the underlying cause, such as by treating hepatitis or alcohol abuse.

In some cases, cirrhosis may be reversible if it is caused by a condition that can be treated or resolved. For example, if cirrhosis is caused by excessive alcohol consumption, it may be reversible if the person stops drinking alcohol and receives proper medical treatment. Similarly, if cirrhosis is caused by a condition such as nonalcoholic fatty liver disease, it may be reversible if the person makes lifestyle changes such as losing weight, exercising, and eating a healthy diet.

It is important to note that cirrhosis is a serious condition that can have serious complications, such as liver failure, and it can be life-threatening if not treated properly. If you have been diagnosed with cirrhosis or are at risk of developing the condition, it is important to follow your doctor's recommendations for treatment and to make any necessary lifestyle changes to help manage the condition.
18. What is hepatic encephalopathy? Hepatic encephalopathy is a condition that occurs when the liver is not able to function properly and remove toxic substances from the blood. These toxic substances can build up in the brain and cause a range of symptoms, including changes in mental function, behavior, and consciousness.

The symptoms of hepatic encephalopathy can range from mild to severe, and may include changes in mood, memory, and concentration; tremors or tremors; disorientation; confusion, slurred speech, changes in sleep patterns; and changes in motor function. In severe cases, hepatic encephalopathy can lead to coma or death.

There are several potential causes of hepatic encephalopathy, including liver failure, cirrhosis (chronic scarring of the liver), hepatitis (inflammation of the liver), and toxic substances that damage the liver. The condition can also be triggered by certain medications, infections, and bleeding in the digestive tract.

Treatment for hepatic encephalopathy typically involves addressing the underlying cause of the condition and controlling the symptoms. This may involve medications to remove toxic substances from the blood, changes to diet and nutrition, and supportive care such as artificial ventilation. In some cases, a liver transplant may be necessary.

Similar

19. What are the symptoms of hepatic encephalopathy in patients with cirrhosis? Hepatic encephalopathy is a condition that occurs when there is damage to the liver, resulting in the accumulation of toxins in the body that can affect brain function. In patients with cirrhosis, the most common symptoms of hepatic encephalopathy include:

Confusion and disorientation: This can range from mild forgetfulness to severe confusion and loss of awareness of surroundings.

Changes in behavior and personality: Patients may become more irritable, aggressive, or withdrawn, and may exhibit unusual or bizarre behavior.

Changes in mental function: Patients may have difficulty thinking, concentrating, or making decisions. They may also experience difficulty speaking or writing.

Changes in physical functioning: Patients may have difficulty walking or moving, and may exhibit tremors or twitching.

Changes in sleep patterns: Patients may have difficulty falling asleep or may sleep more than usual.

Changes in appetite: Patients may lose their appetite or may have a sudden increase in appetite.

It’s important to note that these symptoms may vary in severity and may come and go. If you are experiencing any of these symptoms, it’s important to speak with a healthcare professional as soon as possible.
**Questions**

20. How to prevent hepatic encephalopathy?

Hepatic encephalopathy is a condition that can occur as a result of liver disease or damage. It is characterized by changes in brain function, including confusion, personality changes, and difficulty with muscle control and coordination. There are several steps that can be taken to help prevent hepatic encephalopathy or reduce the risk of developing it:

- **Control and treat the underlying cause of liver disease:** This may include taking medications as prescribed, following a healthy diet, avoiding alcohol, and managing other health conditions such as viral hepatitis or cirrhosis.

- **Monitor and manage ammonia levels:** Ammonia is a substance that is produced by the breakdown of protein in the body. High levels of ammonia can lead to hepatic encephalopathy. Your healthcare provider may recommend medications or other treatments to help control ammonia levels.

- **Manage constipation:** Constipation can lead to an accumulation of toxins in the body, which can worsen hepatic encephalopathy. Staying hydrated and eating a high-fiber diet can help prevent constipation.

- **Avoid certain medications:** Some medications can worsen hepatic encephalopathy, so it is important to discuss all medications with your healthcare provider.

- **Follow a low-protein diet:** A low-protein diet may help reduce the production of ammonia and reduce the risk of hepatic encephalopathy. Your healthcare provider or a dietitian can help you develop a low-protein diet plan that meets your nutritional needs.

- **Manage fluid and electrolyte balance:** It is important to maintain a healthy balance of fluids and electrolytes in the body to help prevent hepatic encephalopathy. Your healthcare provider may recommend medications or other treatments to help manage fluid and electrolyte balance.

It is important to work closely with your healthcare provider to develop a treatment plan that is appropriate for your specific needs.

### Supplementary Table 1. Continued

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It is important to work closely with your healthcare provider to develop a treatment plan that is appropriate for your specific needs.
21. What is the criteria for liver transplant? The criteria for liver transplantation vary depending on the specific situation and the transplant center, but there are some general factors that are typically considered when determining whether a person is a candidate for liver transplantation.

Some of the factors that may be considered in the evaluation for liver transplantation include:

Severity of liver disease: People with severe liver disease that is causing symptoms or complications, or that is likely to progress to end-stage liver disease, may be candidates for liver transplantation.

Other medical conditions: In order to be a candidate for liver transplantation, a person must be generally healthy enough to undergo the procedure and to recover from it. This means that other medical conditions, such as heart disease or uncontrolled infections, may need to be treated or controlled before transplantation can be considered.

Ability to comply with post-transplant care: A person must be able to follow the prescribed treatment and care regimen after transplantation in order to have the best chance of a successful outcome. This includes taking medications as prescribed and attending follow-up appointments.

Age: While there is no strict age limit for liver transplantation, older people may be less likely to be considered candidates due to the increased risks and challenges of surgery and recovery at an advanced age.

Availability of a suitable organ: The availability of a suitable donor liver is also a factor in the decision to undergo transplantation. In some cases, people may be placed on a waiting list for a liver transplant, and the transplant may be performed when a suitable organ becomes available.

It is important to note that the specific criteria for liver transplantation can vary from one transplant center to another, and the decision to proceed with transplantation is ultimately made on a case-by-case basis.
22. What are the symptoms of spontaneous bacterial peritonitis?

Spontaneous bacterial peritonitis (SBP) is a serious infection of the abdomen that can cause symptoms such as:

- Abdominal pain: This is often severe and may be felt in the upper right or upper left part of the abdomen.
- Nausea and vomiting: These may be present if the abdominal pain is severe.
- Fever: A high fever may be present, often above 101°F (38.3°C).
- Decreased urine output: The person may urinate less frequently or produce less urine than usual.
- Confusion or altered mental status: The person may be confused or disoriented, or may have difficulty thinking clearly.
- Rapid breathing: The person may breathe faster than normal.
- Rapid heart rate: The person’s heart may beat faster than normal.
- Swelling of the abdomen: The abdomen may appear swollen or distended.

If you are experiencing any of these symptoms, it is important to seek medical attention as soon as possible. SBP can be a life-threatening condition if not treated promptly.

23. What is spontaneous bacterial peritonitis?

Spontaneous bacterial peritonitis (SBP) is a serious and potentially life-threatening condition that occurs when bacteria enter and infect the peritoneum, the thin layer of tissue that lines the inner wall of the abdomen and covers the abdominal organs. SBP typically develops in people who have cirrhosis, a chronic liver disease that leads to scarring and damage of the liver. However, it can also occur in people with other conditions that cause fluid to accumulate in the abdomen, such as kidney failure, pancreatitis, and peritoneal dialysis.

The symptoms of SBP can be severe and may include abdominal pain, fever, nausea, vomiting, and rapid breathing. Left untreated, SBP can lead to sepsis, a serious and potentially life-threatening condition that occurs when the body’s immune system overreacts to an infection, leading to inflammation and damage to the body’s own tissues and organs.

Treatment of SBP usually involves antibiotics and fluid replacement, and may also include surgery to remove any infected or necrotic (dead) tissue. In severe cases, hospitalization may be necessary. It is important to seek medical attention as soon as possible if you suspect that you or someone you know may have SBP. Early diagnosis and treatment can improve the chances of a full recovery.
24. How to prevent and manage spontaneous bacterial peritonitis in patients with cirrhosis?

Spontaneous bacterial peritonitis (SBP) is a serious complication that can occur in patients with cirrhosis, a condition in which the liver is damaged and scarred. SBP is caused by bacteria entering the abdomen and causing inflammation of the lining of the abdomen (peritoneum). It can lead to serious complications and can be life-threatening if not treated promptly.

To prevent SBP, it is important for patients with cirrhosis to receive proper medical care and follow their treatment plan. This may include taking medications to reduce the risk of infection, such as antibiotics or antiviral drugs. It is also important for patients to maintain good hygiene, including washing their hands regularly and avoiding contact with people who are sick.

If SBP is suspected, it is important to seek medical attention immediately. Treatment may include intravenous antibiotics, fluid replacement, and other supportive care. In severe cases, surgery may be necessary to remove infected tissue or to repair any damage to the abdomen.

It is also important for patients with cirrhosis to receive regular check-ups with their healthcare provider to monitor their condition and to identify any potential complications early on. This can help prevent serious complications and improve the chances of a successful outcome.

Similar

25. What are varices?

Varices are dilated or enlarged veins that are usually found in the esophagus or the lower part of the stomach. They are often seen in people with liver cirrhosis, a condition in which the liver is damaged and scarred and is unable to function properly. Varices can also be found in the legs, but they are more commonly found in the upper part of the body.

Varices can cause a number of problems, including bleeding, which can be life-threatening. When varices bleed, they can cause a person to vomit blood or have black, tarry stools. If you have varices and experience any of these symptoms, it is important to seek medical attention immediately.

Treatment for varices often involves medications to reduce the risk of bleeding, as well as procedures to close or remove the dilated veins. In some cases, a person with varices may need a liver transplant to repair the damaged liver.

Similar

**Supplementary Table 1. Continued**

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<td>Varices are dilated, swollen veins that often occur in the esophagus or stomach of people with cirrhosis, a type of liver disease. The main symptoms of varices in cirrhosis are: Hematemesis (vomiting of blood): This is the most common symptom of varices and is usually the result of a variceal bleed, which occurs when a varix ruptures and bleeds. Hematemesis can also be accompanied by hemorrhoids (passage of blood through the rectum). Dysphagia (difficulty swallowing): Varices can cause dysphagia by narrowing the esophagus and making it difficult for food and liquids to pass through. Abdominal pain: Varices can cause abdominal pain due to the presence of blood in the abdomen, which can lead to irritation and inflammation. Weakness: Varices can cause weakness due to blood loss, which can lead to anemia. Complications of varices in cirrhosis include: Variceal bleeding: This is the most serious complication of varices and can be life-threatening if not treated promptly. Esophageal stricture: Varices can cause scarring of the esophagus, leading to a narrowing of the esophagus (esophageal stricture). This can cause difficulty swallowing and lead to malnutrition. Portal hypertension: Varices can cause increased pressure in the portal vein, which can lead to the development of portal hypertension. Portal hypertension can cause a number of complications, including ascites (build-up of fluid in the abdomen) and hepatic encephalopathy (a condition that affects brain function). It is important to seek medical attention if you have cirrhosis and experience any of the symptoms or complications associated with varices. Early diagnosis and treatment can help prevent serious complications and improve your chances of recovery.</td>
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27. How to prevent and manage esophageal varices in patients with cirrhosis? | Esophageal varices are enlarged veins in the lining of the esophagus (the tube that carries food from the mouth to the stomach). They can occur in people with cirrhosis, which is a condition in which the liver is damaged and scarred and can’t function properly. There are several steps that can be taken to prevent and manage esophageal varices in people with cirrhosis: Treat the underlying cause of cirrhosis: The most effective way to prevent esophageal varices is to treat the underlying cause of cirrhosis. This may involve medications to control conditions such as hepatitis or alcohol abuse, or lifestyle changes such as eating a healthy diet and exercising. Lower the pressure in the portal vein: The portal vein carries blood from the digestive organs to the liver. In people with cirrhosis, the pressure in the portal vein can be high, which can cause esophageal varices. Medications called beta blockers can be used to lower the pressure in the portal vein and reduce the risk of esophageal varices. Endoscopic band ligation: This is a procedure in which a rubber band is placed around the base of an esophageal varix to cut off its blood supply. This can help to shrink the varix and prevent it from bleeding. Sclerotherapy: In this procedure, a chemical solution is injected into the varix to shrink it. TIPS (transjugular intrahepatic portosystemic shunt): This is a procedure in which a small tube is inserted into the liver to create a new pathway for blood to flow around the damaged liver. This can help to lower the pressure in the portal vein and reduce the risk of esophageal varices. It’s important to follow your doctor’s recommendations for managing esophageal varices and to attend regular follow-up appointments to monitor for any changes in the varices. | Similar | 1 | 2 | 1
### Supplementary Table 1. Continued

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</table>
| 28. What are the symptoms and complications of gastrointestinal bleeding in cirrhosis? | Gastrointestinal (GI) bleeding is a common complication of cirrhosis, a chronic liver disease in which scar tissue replaces healthy liver tissue and impairs the liver's ability to function properly. GI bleeding can occur anywhere in the digestive tract from the mouth to the rectum, but it is most common in the esophagus and stomach. Symptoms of GI bleeding in cirrhosis may include:  
Vomiting blood or coffee-ground material (a sign of bleeding in the upper digestive tract)  
Black, tarry stools (a sign of bleeding in the lower digestive tract)  
Weakness and dizziness due to blood loss  
Swelling in the abdomen due to fluid accumulation (ascites)  
Abdominal pain  
Fever  
Complications of GI bleeding in cirrhosis may include:  
Anemia (low red blood cell count) due to blood loss  
Shock, a life-threatening condition that occurs when the body doesn’t have enough blood and oxygen  
Liver failure, which can occur if the bleeding is severe or if the liver is already severely damaged  
Death, which is more likely in people with advanced cirrhosis and those who have experienced multiple episodes of GI bleeding.  
If you have cirrhosis and experience any of the above symptoms, it is important to seek medical attention immediately as GI bleeding can be life-threatening. Your doctor will likely recommend tests to determine the location and cause of the bleeding and may recommend treatment options such as blood transfusions, medications to control bleeding, or endoscopic procedures to stop the bleeding. | Similar      | 1              | 2                 | 2                  |

https://doi.org/10.3350/cmh.2023.0089  
http://www.e-cmh.org
29. How to prevent and manage gastrointestinal bleeding in patients with cirrhosis?

Gastrointestinal bleeding is a serious complication that can occur in patients with cirrhosis, a condition in which the liver is scarred and no longer functions properly. The following steps can help prevent and manage gastrointestinal bleeding in patients with cirrhosis:

- **Control blood pressure**: High blood pressure in the veins that supply blood to the liver (portal hypertension) is a common cause of gastrointestinal bleeding in patients with cirrhosis. Therefore, it is important to control blood pressure to reduce the risk of bleeding. This can be done through medications such as beta blockers, which can help lower blood pressure in the veins.

- **Treat underlying causes of bleeding**: If the bleeding is caused by a specific problem, such as a bleeding ulcer or a tumor, it is important to treat the underlying cause. This may involve medications or surgery.

- **Use proton pump inhibitors**: Proton pump inhibitors (PPIs) are medications that can help reduce the risk of bleeding by decreasing the production of acid in the stomach.

- **Endoscopy**: Endoscopy is a procedure in which a flexible tube with a camera on the end is inserted through the mouth to visualize the inside of the digestive tract. This can help identify the cause of bleeding and allow for treatment, such as applying heat or using a laser to stop the bleeding.

- **Transfusions**: If the patient is losing a significant amount of blood, a transfusion may be necessary to replace lost blood and prevent further complications.

- **Surgery**: In some cases, surgery may be necessary to stop the bleeding or repair damage caused by the bleeding.

It is important for patients with cirrhosis to work closely with their healthcare team to identify the cause of gastrointestinal bleeding and implement appropriate treatment measures.

30. What is ascites in cirrhosis?

Ascites is the accumulation of fluid in the abdomen. It is a common complication of cirrhosis, a progressive liver disease that occurs when scar tissue replaces healthy liver tissue, blocking the flow of blood and hindering the liver’s ability to function properly. The scar tissue interferes with the liver’s ability to produce proteins, process hormones and drugs, and remove toxins from the blood.

Ascites is caused by an imbalance in the production and removal of fluid in the body. In cirrhosis, this is often due to high levels of pressure in the blood vessels of the liver and reduced function of the liver cells. The pressure in the blood vessels can cause fluid to leak out of the blood vessels and into the abdominal cavity, leading to the accumulation of fluid.

Symptoms of ascites in cirrhosis may include abdominal bloating and swelling, difficulty breathing, and a feeling of fullness or pressure in the abdomen. The condition can be uncomfortable and can cause difficulties with daily activities. Treatment may involve medications to reduce fluid buildup and remove excess fluid through a procedure called paracentesis, as well as lifestyle changes and treatment for the underlying liver disease.
Questions
Responses 1
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Reviewer 3 grades for the responses with discrepancies

31. What are the symptoms and complications of ascites in cirrhosis?

Ascites is the accumulation of fluid in the abdomen, and it is a common complication of cirrhosis, a progressive liver disease. Symptoms of ascites may include:

- Abdominal swelling: The abdomen may appear swollen or distended due to the accumulation of fluid.
- Abdominal discomfort or pain: The increased pressure in the abdomen caused by the fluid accumulation can cause discomfort or pain.
- Difficulty breathing: The fluid accumulation can put pressure on the diaphragm, making it difficult to breathe.
- Changes in bowel movements: The fluid accumulation can cause constipation or diarrhea.
- Weight gain: The fluid accumulation can cause rapid weight gain.

Complications of ascites can include:

- Infection: The fluid accumulation can create a breeding ground for bacteria, leading to infections such as spontaneous bacterial peritonitis.
- Hepatorenal syndrome: This is a serious complication that occurs when the kidneys stop working properly due to cirrhosis. It can lead to kidney failure.
- Hepatopulmonary syndrome: This occurs when there is an abnormal connection between the blood vessels in the liver and the lungs, leading to difficulty breathing.
- Gastrointestinal bleeding: The fluid accumulation can put pressure on blood vessels in the gastrointestinal tract, leading to bleeding.

It's important to seek medical attention if you have cirrhosis and experience symptoms of ascites. Treatment may include medications to remove excess fluid, a low-sodium diet, and possibly a procedure to remove the fluid. In some cases, a liver transplant may be necessary.

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To prevent and manage ascites in patients with cirrhosis, it is important to follow a healthy lifestyle and to manage any underlying medical conditions that may be contributing to the development of ascites. This may include:

Maintaining a healthy diet: A low-sodium diet can help reduce the amount of fluid that accumulates in the body. It is important to avoid salty foods and to limit the amount of sodium in your diet to 2,000 milligrams per day or less. Your doctor or a nutritionist can help you plan a healthy, low-sodium diet.

Exercising regularly: Regular physical activity can help improve your overall health and reduce the risk of developing ascites.

Avoiding alcohol: Drinking alcohol can worsen liver damage and increase the risk of developing ascites. If you have cirrhosis, it is important to avoid alcohol altogether.

Managing other medical conditions: If you have other medical conditions such as high blood pressure or heart disease, it is important to manage these conditions properly as they can contribute to the development of ascites.

If you already have ascites, your doctor may recommend one or more of the following treatments:

Diuretics: These medications help your body get rid of excess fluid by increasing urine production. They can be taken orally or injected directly into a vein.

Paracentesis: This is a procedure in which a needle is inserted into the abdominal cavity to remove excess fluid.

Transjugular intrahepatic portosystemic shunt (TIPS): This is a procedure in which a small tube is inserted into the liver to help drain excess fluid from the abdominal cavity.

Liver transplant: In severe cases of cirrhosis, a liver transplant may be necessary to treat ascites.

It is important to work closely with your healthcare team to determine the best treatment plan for you. Proper management of ascites can help improve your quality of life and reduce the risk of complications.

Supplementary Table 1. Continued

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<td>32. How to prevent and manage ascites in patients with cirrhosis?</td>
<td>Ascites is a common complication of cirrhosis, a condition in which scarring of the liver interferes with its ability to function properly. Ascites occurs when fluid builds up in the abdominal cavity, causing discomfort, abdominal distention, and difficulty breathing. It can also lead to other complications such as infection and malnutrition. To prevent and manage ascites in patients with cirrhosis, it is important to follow a healthy lifestyle and to manage any underlying medical conditions that may be contributing to the development of ascites. This may include: Maintaining a healthy diet: A low-sodium diet can help reduce the amount of fluid that accumulates in the body. It is important to avoid salty foods and to limit the amount of sodium in your diet to 2,000 milligrams per day or less. Your doctor or a nutritionist can help you plan a healthy, low-sodium diet. Exercising regularly: Regular physical activity can help improve your overall health and reduce the risk of developing ascites. Avoiding alcohol: Drinking alcohol can worsen liver damage and increase the risk of developing ascites. If you have cirrhosis, it is important to avoid alcohol altogether. Managing other medical conditions: If you have other medical conditions such as high blood pressure or heart disease, it is important to manage these conditions properly as they can contribute to the development of ascites. If you already have ascites, your doctor may recommend one or more of the following treatments: Diuretics: These medications help your body get rid of excess fluid by increasing urine production. They can be taken orally or injected directly into a vein. Paracentesis: This is a procedure in which a needle is inserted into the abdominal cavity to remove excess fluid. Transjugular intrahepatic portosystemic shunt (TIPS): This is a procedure in which a small tube is inserted into the liver to help drain excess fluid from the abdominal cavity. Liver transplant: In severe cases of cirrhosis, a liver transplant may be necessary to treat ascites. It is important to work closely with your healthcare team to determine the best treatment plan for you. Proper management of ascites can help improve your quality of life and reduce the risk of complications.</td>
<td>Similar</td>
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Questions | Responses 1 | Responses 2 | Reviewer 1 grades | Reviewer 2 grades | Reviewer 3 grades for the responses with discrepancies
--- | --- | --- | --- | --- | ---
33. What is the life expectancy for patients with cirrhosis? | The life expectancy for patients with cirrhosis, a condition in which scar tissue replaces healthy liver tissue, can vary significantly depending on the cause of the cirrhosis, the severity of the disease, and the presence of complications such as ascites (accumulation of fluid in the abdomen), bleeding from esophageal varices (enlarged veins in the esophagus), and hepatic encephalopathy (a decline in brain function due to liver failure). In general, the prognosis for patients with cirrhosis is poor, and the average life expectancy is about 5-10 years after diagnosis. However, with proper treatment and lifestyle changes, some patients with cirrhosis can live for many years and even achieve long-term survival. Factors that can influence life expectancy in patients with cirrhosis include: The underlying cause of the cirrhosis: Different types of cirrhosis have different prognoses. For example, cirrhosis caused by alcohol abuse is generally less severe and has a better prognosis than cirrhosis caused by viral hepatitis or autoimmune liver disease. The stage of the disease: The severity of cirrhosis is usually classified into four stages (A, B, C, and D) based on the presence and severity of complications. Patients in the early stages of cirrhosis (A and B) generally have a better prognosis than those in the later stages (C and D). The presence of complications: Complications such as ascites, bleeding from esophageal varices, and hepatic encephalopathy can significantly worsen the prognosis for patients with cirrhosis. The presence of other medical conditions: Patients with cirrhosis who also have other medical conditions, such as diabetes or heart disease, may have a poorer prognosis. It is important to note that life expectancy for patients with cirrhosis can vary widely, and some patients may live for many years with proper treatment and lifestyle changes. It is important for patients with cirrhosis to work closely with their healthcare team to manage their condition and minimize the risk of complications. | Similar | 3 | 2 | 3
34. Why do patients with cirrhosis develop red spots on chest/face? | Cirrhosis is a condition in which the liver becomes scarred and damaged, leading to a reduction in its ability to function properly. It is often the result of long-term alcohol abuse, but can also be caused by other factors such as viral hepatitis, autoimmune diseases, and fatty liver disease. One of the complications of cirrhosis is the development of red spots on the skin, particularly on the chest and face. These spots, known as spider angiomas or angiomata, are small clusters of dilated blood vessels that appear as reddish or purplish lesions on the skin. They are often found in people with liver disease, and are thought to be caused by increased levels of estrogen in the body. High levels of estrogen can occur in people with cirrhosis due to the liver’s decreased ability to metabolize and clear hormones from the body. Spider angiomas are generally benign and do not cause any symptoms, but they may be a sign of underlying liver disease. If you have red spots on your chest or face and are concerned about your liver health, it is important to speak with a healthcare provider for further evaluation and treatment. | Similar | 1 | 1 | N/A
Questions

35. Can a patient with cirrhosis get liver cancer? How to prevent liver cancer in cirrhosis?

Yes, it is possible for a patient with cirrhosis to develop liver cancer. Cirrhosis is a condition in which the liver is damaged and scarred, and it is a major risk factor for the development of liver cancer.

There are several ways that people with cirrhosis can reduce their risk of developing liver cancer:

- Avoiding alcohol: Excessive alcohol consumption is a major risk factor for the development of both cirrhosis and liver cancer. If you have cirrhosis, it is important to avoid alcohol or to consume it in moderation.
- Getting vaccinated: Some viruses, such as hepatitis B and C, can cause cirrhosis and increase the risk of liver cancer. Getting vaccinated against these viruses can help protect against both conditions.
- Controlling other risk factors: Other risk factors for liver cancer include being overweight or obese, having diabetes, and having high levels of iron in the blood. It is important to manage these risk factors through a healthy diet, exercise, and medication if necessary.
- Regular monitoring: Regular monitoring by a healthcare provider can help identify early signs of liver cancer in people with cirrhosis. This may include imaging tests, blood tests, and liver biopsies.

It is important to note that while these measures may help reduce the risk of liver cancer in people with cirrhosis, they cannot completely eliminate the risk. If you have cirrhosis, it is important to follow the recommendations of your healthcare provider and to seek medical attention if you experience any unusual symptoms.

36. What is the risk of liver cancer in patients with cirrhosis?

Cirrhosis is a serious and potentially life-threatening condition that can lead to an increased risk of developing liver cancer. The risk of developing liver cancer is higher in patients with cirrhosis than in those without the condition.

There are several factors that can increase the risk of developing liver cancer in patients with cirrhosis, including:

- The severity of the cirrhosis: The more advanced the cirrhosis, the higher the risk of developing liver cancer.
- The underlying cause of the cirrhosis: Certain causes of cirrhosis, such as chronic infection with the hepatitis B or C virus, are more likely to lead to liver cancer than others.
- The presence of other risk factors: Other factors that can increase the risk of developing liver cancer in patients with cirrhosis include a family history of liver cancer, heavy alcohol consumption, and exposure to certain toxins or chemicals.

Overall, the risk of developing liver cancer in patients with cirrhosis is relatively low, but it is still important for these patients to undergo regular surveillance and screenings to detect any potential problems early.
Questions

Responses 1

Responses 2

Reviewer 1 grades

1. Comprehensive

2. Correct but inadequate

3. Mixed with correct and incorrect/outdated data

4. Completely incorrect

Reviewer 2 grades

1. Comprehensive

2. Correct but inadequate

3. Mixed with correct and incorrect/outdated data

4. Completely incorrect

Reviewer 3 grades for the responses with discrepancies

Diagnosis

37. How is cirrhosis diagnosed?

Cirrhosis is a serious and potentially life-threatening condition that occurs when the liver is damaged and scarred over time. It is often the result of long-term alcohol abuse or chronic hepatitis, but it can also be caused by other conditions such as nonalcoholic fatty liver disease, autoimmune hepatitis, and primary biliary cholangitis.

There are several tests and procedures that may be used to diagnose cirrhosis, including:

Physical examination: During a physical examination, a healthcare provider will check for signs of liver damage, such as jaundice (yellowing of the skin and whites of the eyes), spider angiomas (small red spots on the skin), and ascites (abdominal swelling).

Blood tests: Blood tests can help to detect liver damage, such as an elevation in liver enzymes, and can also help to identify any underlying conditions that may be causing cirrhosis.

Liver function tests: These tests measure the level of certain substances in the blood, such as bilirubin and albumin, which can help to determine how well the liver is functioning.

Ultrasound: An ultrasound uses sound waves to create a detailed image of the liver and can help to identify scarring or other abnormalities in the liver.

CT scan or MRI: A CT scan or MRI can provide detailed images of the liver and can help to confirm the presence of cirrhosis.

Liver biopsy: A liver biopsy involves taking a small sample of liver tissue for examination under a microscope. This can help to confirm the diagnosis of cirrhosis and can also help to determine the extent and severity of the damage.

It’s important to note that cirrhosis is a serious and potentially life-threatening condition that requires prompt treatment. If you have any symptoms that suggest you may have cirrhosis, it is important to see a healthcare provider for a proper diagnosis and treatment.

Supplementary Table 1. Continued

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<td>Diagnosis</td>
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Supplementary Table 1. Continued
Questions

38. What is a Child-Turcotte-Pugh score?

*The Child-Turcotte-Pugh (CTP) score is a system used to assess the severity of liver disease in patients with cirrhosis. It is a widely used tool that helps doctors determine the best course of treatment for patients with cirrhosis and helps predict the likelihood of survival.

The CTP score is calculated based on three factors:

The severity of liver dysfunction, as measured by the presence of certain clinical signs and symptoms, such as jaundice, ascites, and encephalopathy.

The degree of hepatic reserve, as measured by the patient’s albumin level, prothrombin time, and bilirubin level.

The patient’s functional status, as determined by their ability to perform activities of daily living.

Based on these three factors, the CTP score is calculated as follows:

Class A: Score 5-6 (mild liver disease)
Class B: Score 7-9 (moderate liver disease)
Class C: Score 10-15 (severe liver disease)

The CTP score is useful in helping doctors determine the best course of treatment for patients with cirrhosis and in predicting the likelihood of survival. It is important to note that the CTP score is only one tool that doctors use to assess liver disease, and it should be used in conjunction with other clinical and laboratory findings to get a complete picture of a patient’s health.

39. What is a MELD score? What is a MELD-Na score?

The Model for End-Stage Liver Disease (MELD) score is a system that is used to predict the likelihood of mortality within the next three months in patients with end-stage liver disease. It is calculated based on the values of three laboratory tests: serum bilirubin, serum creatinine, and international normalized ratio (INR). These tests are used to assess the severity of liver damage, kidney function, and blood clotting ability, respectively. The MELD score is calculated using the following formula:

\[
\text{MELD score} = 3.78 \ln(\text{serum bilirubin (mg/dL)}) + 11.2 \ln(\text{serum creatinine (mg/dL)}) + 9.57 \ln(\text{INR}) + 6.43
\]

The MELD score ranges from 6 to 40, with a higher score indicating a higher risk of mortality. The MELD score is used to prioritize liver transplantation for patients with end-stage liver disease.

The MELD-Na score is a modified version of the MELD score that includes sodium level in the calculation. Sodium level is an important factor in the development of liver disease and can affect a patient’s prognosis. The MELD-Na score is calculated using the following formula:

\[
\text{MELD-Na score} = \text{MELD score} + 0.379 \times \ln(\text{sodium level (mEq/L)})
\]

Like the MELD score, the MELD-Na score ranges from 6 to 40, with a higher score indicating a higher risk of mortality. The MELD-Na score is used to prioritize liver transplantation for patients with end-stage liver disease, particularly in cases where sodium levels are abnormal.

Similiar

Reviewer 1 grades
1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

Reviewer 2 grades
1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

Reviewer 3 grades for the responses with discrepancies
3 1 3

Treatment

Supplementary Table 1. Continued
### 40. How is cirrhosis treated?

Cirrhosis is a serious and often progressive liver disease that is caused by long-term damage to the liver. It is characterized by scarring of the liver tissue, which can interfere with the organ’s ability to function properly. There is no cure for cirrhosis, but treatment can help to slow the progression of the disease and improve symptoms.

**Treatment for cirrhosis may include:**

- **Lifestyle changes:** Making lifestyle changes, such as quitting smoking and drinking alcohol, can help to slow the progression of cirrhosis.
- **Medications:** Your doctor may prescribe medications to treat the underlying cause of cirrhosis, such as medications to control hepatitis or to reduce inflammation in the liver.
- **Nutrition:** A healthy diet can help to support liver function and reduce the risk of complications. Your doctor may recommend a low-salt, low-fat, and high-carbohydrate diet.
- **Transplant:** In severe cases of cirrhosis, a liver transplant may be necessary. A liver transplant involves surgically removing the damaged liver and replacing it with a healthy donor liver.

It is important to work closely with your doctor to develop a treatment plan that is right for you. Cirrhosis is a serious and potentially life-threatening condition, and it is important to seek medical treatment as soon as possible.

**Similar**

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### 41. Is there a cure for cirrhosis?

Cirrhosis is a chronic condition that can lead to serious health problems, including liver failure. While there is no cure for cirrhosis, treatment can help manage the symptoms and slow the progression of the disease. Early detection and treatment of the underlying cause of cirrhosis, such as chronic alcoholism or hepatitis, is the key to managing the condition.

**Treatment options for cirrhosis may include:**

- **Medications:** There are several medications that can help manage the symptoms of cirrhosis and prevent further damage to the liver. These may include diuretics to reduce fluid accumulation, medications to control bleeding and blood pressure, and antibiotics to treat or prevent infections.
- **Lifestyle changes:** Making healthy lifestyle choices, such as quitting smoking and reducing alcohol consumption, can help manage the symptoms of cirrhosis and slow the progression of the disease.
- **Nutrition:** Eating a healthy, balanced diet can help improve overall health and provide the nutrients necessary for healing.
- **Surgery:** In some cases, surgery may be necessary to treat complications of cirrhosis, such as a bleeding esophageal varix or hepatocellular carcinoma (liver cancer).
- **Liver transplant:** In advanced cases of cirrhosis, a liver transplant may be the best option. A liver transplant involves replacing the damaged liver with a healthy one from a donor. While a liver transplant can be a life-saving treatment, it is a complex and risky procedure.

It is important to work closely with a healthcare provider to determine the best treatment plan for managing cirrhosis.

**Similar**

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**Supplementary Table 1. Continued**

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<td>Similar</td>
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<td>41. Is there a cure for cirrhosis?</td>
<td>Cirrhosis is a chronic condition that can lead to serious health problems, including liver failure. While there is no cure for cirrhosis, treatment can help manage the symptoms and slow the progression of the disease. Early detection and treatment of the underlying cause of cirrhosis, such as chronic alcoholism or hepatitis, is the key to managing the condition.</td>
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When do doctors consider a liver transplant for cirrhosis?

Doctors usually consider a liver transplant for cirrhosis when the disease has progressed to a severe stage and the patient is experiencing significant symptoms or complications that are significantly impacting their quality of life. This may include ascites (buildup of fluid in the abdomen), hepatic encephalopathy (a brain disorder caused by liver failure), variceal bleeding (bleeding from enlarged veins in the esophagus or stomach), or severe malnutrition.

Liver transplantation is typically considered for patients with cirrhosis when the condition has progressed to a stage known as end-stage liver disease (ESLD). This is a serious and advanced stage of liver damage, characterized by the presence of severe symptoms and complications that significantly impact a person’s quality of life and survival.

There are several criteria that doctors use to determine if a liver transplant is appropriate for a patient with cirrhosis. These criteria may include:

- The severity of the patient's liver disease: A patient with cirrhosis may be considered for a liver transplant if they have developed severe complications such as hepatic encephalopathy (a brain disorder caused by liver failure), ascites (abnormal accumulation of fluid in the abdomen), or variceal bleeding (bleeding from dilated veins in the esophagus or stomach).
- The patient's overall health: A liver transplant candidate must be in good overall health and have no other serious medical conditions that would make them ineligible for transplant surgery.
- The availability of a suitable donor organ: The availability of a suitable donor organ is a key factor in determining whether a patient with cirrhosis is a candidate for transplantation. The organ must be a good match for the patient and be in good condition.
- The patient's willingness and ability to adhere to the post-transplant regimen: A liver transplant involves a significant commitment to ongoing medical care, including taking medications and following a special diet. The patient must be willing and able to adhere to this regimen in order to be considered for a transplant.

It's important to note that liver transplantation is a major surgery with significant risks and complications, and it's not suitable for everyone. It's also important to note that there is a shortage of available organs for transplant, so the process of getting a liver transplant can be very competitive.
### Questions and Responses

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<th>Reviewer 1 grades</th>
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<th>Reviewer 3 grades for the responses with discrepancies</th>
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<tr>
<td>43. How much ascites can be removed each time for patients with cirrhosis?</td>
<td>Ascites, or the accumulation of fluid in the abdominal cavity, can be a common complication of cirrhosis, a type of chronic liver disease. The amount of ascites that can be removed during a procedure, such as paracentesis, will depend on various factors including the patient’s overall health, the underlying cause of the ascites, and the presence of any other complications. In general, it is generally safe to remove up to 5 liters of ascites at a time, although some patients may be able to tolerate more. The amount of ascites that can be removed in a single procedure may also be limited by the size of the patient’s abdominal cavity and the presence of any adhesions or other abnormalities. It is important to note that paracentesis, or the removal of ascites, is typically only used to relieve symptoms and is not a cure for the underlying condition. Other treatments, such as medications and lifestyle changes, may be necessary to manage the cirrhosis and prevent further accumulation of ascites.</td>
<td>Ascites, or the accumulation of fluid in the abdomen, is a common complication of cirrhosis, a chronic liver disease. The amount of ascites that can be removed during a procedure called paracentesis will depend on several factors, including the underlying cause of the ascites, the patient’s overall health, and the presence of any other medical conditions. In general, the maximum amount of fluid that can be safely removed during a single paracentesis procedure is usually between 5 and 25 liters, depending on the patient’s size and condition. However, removing large amounts of fluid at once can be challenging and may lead to complications such as hypovolemia (low blood volume) or electrolyte imbalances. Therefore, it is generally recommended to remove smaller amounts of fluid at a time, with the goal of gradually reducing the overall amount of ascites. It is important to note that paracentesis is not a cure for ascites, and the fluid will usually return unless the underlying cause of the ascites is treated. Therefore, patients with cirrhosis and ascites may need to undergo repeat paracentesis procedures or receive other forms of treatment, such as medications or liver transplantation, to manage their condition.</td>
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<td>44. Should a patient with cirrhosis get albumin with a paracentesis?</td>
<td>It is generally recommended that patients with cirrhosis who are undergoing a paracentesis procedure receive albumin replacement. This is because patients with cirrhosis often have low levels of albumin due to liver dysfunction, and losing large volumes of fluid during a paracentesis can further decrease their albumin levels. Low albumin levels can lead to complications such as edema (fluid accumulation in the tissue) and ascites (fluid accumulation in the abdominal cavity). Albumin replacement can help to maintain or restore normal albumin levels and prevent or treat these complications. It is usually given intravenously after the paracentesis procedure. The dose and duration of albumin replacement will depend on the patient’s individual circumstances and should be determined by a healthcare provider. It is important to note that albumin replacement is not always necessary in every patient with cirrhosis undergoing a paracentesis. The decision to use albumin replacement should be made on a case-by-case basis, taking into account the patient’s overall clinical status, the amount of fluid removed during the paracentesis, and any other relevant factors.</td>
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Questions

Responses 1

Responses 2

Reviewer 1 grades

1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

Reviewer 2 grades

1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

Reviewer 3 grades for the responses with discrepancies

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45. How to treat ascites in patients with cirrhosis that is not responsive to high dose waterpills?

Ascites, or the accumulation of fluid in the abdomen, is a common complication of cirrhosis. It can be caused by a variety of factors, including high blood pressure in the veins that carry blood from the intestines, liver, and spleen to the heart (hepatic venous pressure gradient, or HVPG), kidney problems, and high levels of aldosterone, a hormone that regulates electrolyte balance and blood pressure.

Treatment for ascites in patients with cirrhosis typically involves a combination of medications and lifestyle changes. If high-dose diuretics (water pills) are not sufficient to control ascites, other options may include:

- Increasing the dose of diuretics or switching to a different type of diuretic: Your healthcare provider may recommend increasing the dose of your current diuretic or switching to a different type of diuretic, such as spironolactone or eplerenone, which can help reduce fluid accumulation.
- Adding a vasoconstrictor: Vasoconstrictors, such as midodrine or octreotide, can help constrict blood vessels and reduce fluid accumulation.
- Using albumin infusions: Albumin is a protein that helps maintain fluid balance in the body. Infusions of albumin can help prevent or reduce the risk of developing ascites.
- Paracentesis: If the ascites is severe and not responding to other treatments, your healthcare provider may recommend a procedure called paracentesis to remove the excess fluid from your abdomen.
- Liver transplant: In some cases, liver transplantation may be recommended for patients with cirrhosis and refractory ascites.

It's important to work closely with your healthcare provider to determine the best treatment approach for your specific situation.

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Sodium restriction: Limiting sodium intake can help to reduce the amount of fluid in the body. This may involve following a low-sodium diet and avoiding salty foods and drinks.

Paracentesis: This procedure involves removing fluid from the abdomen using a needle or catheter. It can provide relief from the symptoms of ascites, but it is typically not a long-term solution.

Transjugular intrahepatic portosystemic shunt (TIPS): This procedure involves creating a connection between the portal vein and the hepatic vein in the liver, allowing blood to bypass the damaged liver tissue. This can help to reduce pressure in the portal vein and decrease the amount of fluid that accumulates in the abdomen.

Liver transplant: In severe cases of cirrhosis, a liver transplant may be necessary. This involves replacing the damaged liver with a healthy one from a donor.

It is important to work closely with a healthcare provider to determine the most appropriate treatment for ascites in patients with cirrhosis. In some cases, a combination of these approaches may be necessary to manage the condition effectively.

Supplementary Table 1. Continued

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<th>Questions</th>
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<td>Ascites, or the accumulation of fluid in the abdomen, is a common complication of cirrhosis, a condition in which scar tissue replaces healthy liver tissue and impairs its function. If ascites is not responsive to high-dose diuretics (also known as water pills), there are several other treatment options that may be considered. Sodium restriction: Limiting sodium intake can help to reduce the amount of fluid in the body. This may involve following a low-sodium diet and avoiding salty foods and drinks.</td>
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Sodium restriction: Limiting sodium intake can help to reduce the amount of fluid in the body. This may involve following a low-sodium diet and avoiding salty foods and drinks.

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Liver transplant: In severe cases of cirrhosis, a liver transplant may be necessary. This involves replacing the damaged liver with a healthy one from a donor.

It is important to work closely with a healthcare provider to determine the most appropriate treatment for ascites in patients with cirrhosis. In some cases, a combination of these approaches may be necessary to manage the condition effectively.
Questions

46. What are the side effects of diuretics in cirrhosis?

Diuretics, also known as water pills, are medications that increase the amount of urine produced by the kidneys and help to remove excess fluid from the body. They are often used in the treatment of cirrhosis, a condition in which the liver is damaged and scarred, to help reduce fluid buildup in the abdomen and legs.

There are several potential side effects of diuretics in people with cirrhosis, including:

- Electrolyte imbalances: Diuretics can cause imbalances in electrolytes such as potassium, sodium, and chloride, which are essential for proper body function. Low potassium levels can cause muscle weakness and cramping, while low sodium levels can cause fatigue and confusion.

- Dehydration: Diuretics can cause dehydration, especially if they are taken without adequate fluid intake. This can lead to dizziness, fatigue, and muscle cramps.

- Kidney damage: Diuretics can cause kidney damage in some people, especially those with pre-existing kidney problems or those taking high doses of the medication.

- Low blood pressure: Diuretics can lower blood pressure, which can cause dizziness or fainting when standing up too quickly.

- Hypotension: Diuretics can cause hypotension, or low blood pressure, which can lead to symptoms such as dizziness, lightheadedness, and fainting.

It is important to talk to your doctor about the potential side effects of diuretics and to follow their instructions for taking the medication. If you experience any side effects, it is important to report them to your doctor so that they can be properly managed.

47. Can transjugular intrahepatic portosystemic shunt help with ascites?

Transjugular intrahepatic portosystemic shunt (TIPS) is a procedure that involves creating a connection between the portal vein and the hepatic vein within the liver. This connection, or shunt, can help to reduce the pressure in the portal vein, which can in turn help to reduce the accumulation of fluid in the abdomen, or ascites.

Ascites is a common complication of liver cirrhosis and other conditions that affect the liver and can cause fluid to build up in the abdomen. TIPS can be used as a treatment option for ascites in people who have not responded to other treatments, such as diuretics or paracentesis (removal of fluid from the abdomen using a needle).

TIPS is a minimally invasive procedure that is typically performed using imaging guidance, such as ultrasound or computed tomography (CT). The procedure involves inserting a thin tube, or catheter, through a small incision in the neck or groin and threading it through the blood vessels to the liver. Once the catheter is in place, a stent is inserted through the catheter to create the shunt.

TIPS can be effective at reducing ascites in many people, but it is not a cure for the underlying cause of the fluid accumulation. It may be necessary to repeat the procedure if the ascites returns or to consider other treatment options, such as liver transplantation, if the underlying liver disease progresses.
Transjugular intrahepatic portosystemic shunt (TIPS) is a procedure that is used to treat portal hypertension, which is a condition in which the blood pressure in the portal vein (which carries blood from the digestive organs to the liver) is too high. The procedure involves creating a shunt, or small channel, between the portal vein and the hepatic vein (which carries blood from the liver to the heart).

As with any medical procedure, there are potential risks and side effects associated with TIPS. Some of the possible side effects of TIPS include:

- **Bleeding**: TIPS involves making a small incision in the skin and then inserting a catheter into a vein. There is a risk of bleeding during or after the procedure.
- **Infection**: There is a risk of infection at the site of the shunt or at the insertion site of the catheter.
- **Hepatic encephalopathy**: TIPS may cause hepatic encephalopathy, a condition in which toxins build up in the brain due to liver dysfunction. Symptoms may include confusion, tremors, and difficulty speaking.
- **Shunt stenosis**: The shunt may become narrowed, which can decrease its effectiveness. This may require further intervention.
- **Renal failure**: TIPS may cause kidney failure in some cases.
- **Shunt dysfunction**: The shunt may become blocked or may not work properly, which can lead to an increased risk of bleeding or other complications.

It’s important to discuss the potential risks and benefits of TIPS with a healthcare provider before the procedure.

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<td>48. Are there any side effects of transjugular intrahepatic portosystemic shunt?</td>
<td>Transjugular intrahepatic portosystemic shunt (TIPS) is a procedure used to treat portal hypertension, which is a condition in which the blood pressure in the portal vein (which carries blood from the digestive organs to the liver) is too high. The procedure involves creating a shunt, or small channel, between the portal vein and the hepatic vein (which carries blood from the liver to the heart).</td>
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Questions | Responses 1 | Responses 2
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49. What can be done to treat nonalcoholic steatohepatitis-related cirrhosis? | Nonalcoholic steatohepatitis (NASH) is a type of liver disease characterized by the accumulation of fat in the liver and inflammation, which can eventually lead to cirrhosis, a severe form of liver damage. There is no specific treatment for NASH-related cirrhosis, but there are several measures that can be taken to slow the progression of the disease and improve symptoms.

The most important step in managing NASH-related cirrhosis is to address the underlying cause of the liver damage, which is often related to unhealthy lifestyle factors such as being overweight or obese, having high levels of cholesterol or triglycerides in the blood, or having uncontrolled diabetes.

Treatment may involve a combination of the following measures:

- Lifestyle changes: Making healthy lifestyle changes, such as losing weight, exercising regularly, and eating a healthy diet, can help improve liver function and slow the progression of NASH.
- Medications: Certain medications, such as statins, can be used to lower cholesterol and triglyceride levels, which may help reduce the amount of fat in the liver.
- Vitamin supplements: Some studies have shown that taking supplements of antioxidants, such as vitamin E, may help reduce liver inflammation and improve liver function in people with NASH.
- Liver transplant: In advanced cases of NASH-related cirrhosis, a liver transplant may be necessary. This involves replacing the damaged liver with a healthy one from a donor.

It’s important to work closely with a healthcare provider to determine the best course of treatment for NASH-related cirrhosis. Prompt treatment is crucial to prevent further liver damage and potentially life-threatening complications. | Similar | 1 | 3 | 1

50. Why should beta blockers be taken for cirrhosis? | Beta blockers are medications that block the effects of the hormone adrenaline on the body’s cardiovascular system, which can help lower blood pressure and reduce the risk of heart problems. In people with cirrhosis, a type of liver disease, beta blockers may be used to help reduce the risk of complications such as varical bleeding, a type of bleeding that occurs when the blood vessels in the esophagus or stomach become dilated and rupture.

Cirrhosis can cause an increase in blood pressure in the veins leading to the liver, which can lead to the development of varices. Beta blockers can help reduce the blood pressure in these veins and decrease the risk of varical bleeding. They may also be used to help reduce the risk of other complications of cirrhosis, such as heart failure and portal hypertension.

It is important to note that beta blockers should be used with caution in people with cirrhosis, as they can cause side effects such as fatigue and impaired breathing. It is important to discuss the use of beta blockers with a healthcare provider, who can determine the appropriate dosage and monitoring for individual patients. | Similar | 1 | 2 | 2

Supplementary Table 1. Continued
### Questions

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<th>Reviewer 3 grades for the responses with discrepancies</th>
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<tr>
<td>51. How long is rifaximin taken for hepatic encephalopathy?</td>
<td>Rifaximin is a medication that is used to treat hepatic encephalopathy, a condition that can occur in people with liver disease or cirrhosis. The usual recommended dose of rifaximin for the treatment of hepatic encephalopathy is 550 mg taken orally twice daily for 7 to 14 days. The duration of treatment with rifaximin will depend on the severity of the hepatic encephalopathy and the response to treatment. Your healthcare provider will determine the appropriate duration of treatment for you based on your individual needs. It is important to follow your healthcare provider's instructions and take rifaximin as directed. Do not stop taking rifaximin or change your dose without first talking to your healthcare provider.</td>
<td>Rifaximin is a medication that is used to treat hepatic encephalopathy, which is a condition that occurs when there is a buildup of toxins in the blood that can lead to changes in mental status and other neurological symptoms. Rifaximin is usually taken by mouth, and the usual dosage is 200 mg to 400 mg three times a day. The duration of treatment with rifaximin will depend on the severity of the hepatic encephalopathy and the response to treatment. It is important to follow the dosing instructions provided by your healthcare provider and to continue taking the medication as prescribed, even if you start to feel better, to help prevent the hepatic encephalopathy from recurring.</td>
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52. What are the benefits and risk of taking rifaximin in patients with cirrhosis?

Rifaximin is an antibiotic that is commonly used to treat certain types of gastrointestinal infections and is sometimes used in the treatment of hepatic encephalopathy in patients with cirrhosis. The benefits of taking rifaximin in patients with cirrhosis include:

- Reducing the risk of recurrent episodes of hepatic encephalopathy, which is a condition that can cause confusion, difficulty with coordination and balance, and even coma in severe cases.
- Improving quality of life for patients with cirrhosis by reducing symptoms associated with hepatic encephalopathy.
- Decreasing the need for hospitalizations and other medical interventions in patients with cirrhosis.
- Some of the potential risks and side effects of taking rifaximin in patients with cirrhosis include:
  - Diarrhea: Rifaximin can cause diarrhea, which can be a particular concern for patients with cirrhosis, as they may be more prone to dehydration.
  - Allergic reactions: Rifaximin can cause allergic reactions in some people, including rash, itching, and difficulty breathing.
  - Other gastrointestinal side effects: Rifaximin can also cause other gastrointestinal side effects, such as nausea, abdominal pain, and bloating.
  - Antibiotic resistance: The use of antibiotics, including rifaximin, can lead to the development of antibiotic-resistant bacteria. This can be a concern for patients with cirrhosis, as they may be more vulnerable to infection.

It is important to discuss the potential risks and benefits of taking rifaximin with your healthcare provider, as well as any other medications you are taking, before starting treatment. Your healthcare provider will be able to determine the most appropriate treatment for your specific situation.

Rifaximin is a broad-spectrum antibiotic that is commonly used to treat bacterial infections in the gut. In patients with cirrhosis, rifaximin may be used to treat infections or to reduce the risk of gastrointestinal bleeding. The potential benefits of taking rifaximin in patients with cirrhosis include:

- Reducing the risk of gastrointestinal bleeding. Cirrhosis is a condition in which the liver is scarred and damaged, leading to impaired function. One of the complications of cirrhosis is an increased risk of gastrointestinal bleeding, which can be life-threatening. Rifaximin may help reduce this risk by decreasing the amount of bacteria in the gut, which can contribute to the development of bleeding.
- Treating infections: Cirrhosis can weaken the immune system, making patients more prone to infections. Rifaximin may be effective in treating infections caused by bacteria in the gut, such as traveler’s diarrhea or diarrhea associated with antibiotic use.
- However, there are also risks associated with taking rifaximin in patients with cirrhosis. These may include:
  - Drug interactions: Rifaximin may interact with other medications that a patient with cirrhosis is taking, such as blood thinners or medications for high blood pressure. It is important for patients to inform their healthcare provider about all medications they are taking to avoid potential drug interactions.
  - Allergic reactions: Some patients may have an allergic reaction to rifaximin, which can range from mild skin rash to a life-threatening reaction called anaphylaxis.
  - Antibiotic resistance: Overuse or improper use of antibiotics, including rifaximin, can lead to the development of antibiotic-resistant bacteria. This can make it more difficult to treat infections in the future.
  - In summary, the benefits of taking rifaximin in patients with cirrhosis may include reducing the risk of gastrointestinal bleeding and treating infections. However, there are also risks to consider, including drug interactions, allergic reactions, and the potential for antibiotic resistance. It is important for patients to discuss the risks and benefits of rifaximin with their healthcare provider before starting treatment.
53. What are complications of paracentesis in cirrhosis?

Paracentesis is a procedure in which a needle or catheter is inserted into the abdomen to remove excess fluid that has accumulated there, a condition called ascites. In people with cirrhosis, a liver condition that is often caused by chronic alcoholism or viral hepatitis, paracentesis can be a useful treatment to relieve abdominal discomfort and improve quality of life. However, there are several potential complications that can occur during or after the procedure, including:

- **Infection:** The risk of infection is generally low, but there is a risk of infection at the insertion site or the possibility of introducing bacteria into the abdomen.
- **Bleeding:** There is a risk of bleeding during the procedure, especially in people with bleeding disorders or who are taking blood-thinning medications.
- **Perforation:** There is a risk of perforation, or puncturing, of the abdominal wall or other organs during the procedure.
- **Hypovolemia:** Removing a large amount of fluid from the abdomen can lead to low blood volume (hypovolemia), which can cause lightheadedness, dizziness, and fainting.
- **Recurrent ascites:** In some cases, the fluid may return after the procedure, and additional paracentesis may be needed.
- **Electrolyte imbalances:** Removing fluid from the abdomen can also lead to imbalances in electrolytes, such as sodium and potassium, which can cause muscle weakness and other symptoms.

Overall, the risks of paracentesis are generally low, and the procedure is generally well tolerated. However, it is important to discuss the potential risks and benefits of the procedure with a healthcare provider before deciding whether it is appropriate for you.
Questions | Responses 1 | Responses 2 | Reviewer 1 grades | Reviewer 2 grades | Reviewer 3 grades for the responses with discrepancies
---|---|---|---|---|---
54. What should be done to prevent complications of paracentesis in cirrhosis patients? | Paracentesis is a procedure in which fluid is removed from the abdominal cavity using a needle or a small tube. It is often performed in patients with cirrhosis, a chronic liver disease, to remove excess fluid that has accumulated in the abdomen, a condition known as ascites. There are several steps that can be taken to prevent complications during and after paracentesis in patients with cirrhosis:

- **Use proper sterile technique**: It is important to follow proper sterilization techniques to reduce the risk of infection.
- **Administer antibiotics**: Antibiotics may be given before and after the procedure to reduce the risk of infection.
- **Monitor fluid balance**: It is important to closely monitor the patient's fluid balance to ensure that they do not become dehydrated or overhydrated after the procedure.
- **Monitor for bleeding**: Bleeding can occur during or after paracentesis. It is important to closely monitor the patient for signs of bleeding, such as blood in the drainage fluid or a drop in blood pressure.
- **Use a small needle**: Using a smaller needle for the procedure may reduce the risk of complications, such as bleeding or infection.
- **Avoid over-draining**: It is important to avoid removing too much fluid during the procedure to prevent complications, such as low blood pressure or dehydration.
- **Avoid large volumes of fluid**: Removing large volumes of fluid at once can cause complications, such as low blood pressure or electrolyte imbalances. It is generally recommended to remove smaller volumes of fluid at a time.
- It is important to follow the guidelines and recommendations of the healthcare provider to prevent complications during and after paracentesis in patients with cirrhosis.

### 55. Does eating salt help increase blood sodium levels in cirrhosis?

In cirrhosis, the liver is damaged and may not be able to function properly. This can lead to a variety of complications, including an imbalance of electrolytes, including sodium, in the body. Consuming more salt can help increase blood sodium levels, but it is important to be cautious when doing so, as excessive salt intake can be harmful to people with cirrhosis.

In cirrhosis, the liver is unable to remove excess water and electrolytes from the body as efficiently as it should. As a result, people with cirrhosis may develop a condition called hyponatremia, which is characterized by low levels of sodium in the blood. Low sodium levels can cause symptoms such as fatigue, weakness, muscle cramps, and dizziness.

If you have cirrhosis and are experiencing low blood sodium levels, it is important to talk to your doctor about the best way to manage your condition. Your doctor may recommend a low-sodium diet or may prescribe medications to help manage your electrolyte levels. In some cases, your doctor may recommend increasing your salt intake, but this should be done under medical supervision to ensure that you are not consuming too much salt.

In general, it is important to maintain a balanced diet and to consume a healthy amount of salt. Too much salt can lead to high blood pressure, which can be harmful to people with cirrhosis. It is always best to consult with a healthcare professional before making any changes to your diet or medication regimen.

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### Lifestyle

56. Can cirrhosis patients still drink alcohol?

It is generally not recommended for people with cirrhosis to drink alcohol. Cirrhosis is a serious condition in which the liver is severely damaged, and alcohol can further damage the liver and worsen the symptoms of cirrhosis.

The liver is responsible for breaking down and removing toxins from the body, and alcohol is a toxic substance that puts a strain on the liver. In people with cirrhosis, the liver is already impaired and may not be able to effectively process alcohol, which can lead to further damage and complications.

In addition to damaging the liver, alcohol can also interfere with medications that people with cirrhosis may be taking and can worsen other health conditions that may be present.

It is important for people with cirrhosis to follow the recommendations of their healthcare provider and to avoid alcohol in order to protect their liver and maintain their overall health.

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<td>Similar</td>
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<td>N/A</td>
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57. What pain medications are safe in cirrhosis?

Cirrhosis is a condition in which the liver is severely damaged and scarred, and it can cause a range of symptoms including abdominal pain, fatigue, and weakness. The safe use of pain medications in people with cirrhosis can be challenging because the liver plays a crucial role in metabolizing and eliminating many medications from the body. As a result, people with cirrhosis may be at increased risk of side effects or adverse reactions to certain medications.

It is important to consult a healthcare professional before starting any new medications, including pain medications, if you have cirrhosis. Your healthcare provider will consider your specific situation and medical history, as well as the potential risks and benefits of different treatment options. They may recommend a pain medication that is safe for use in people with cirrhosis or recommend a different treatment approach.

In general, non-steroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen and naproxen are not recommended for use in people with cirrhosis because they can cause gastrointestinal bleeding and worsen liver function. Acetaminophen (also known as paracetamol) is generally considered to be safer for use in people with cirrhosis, although it is important to use it at the lowest effective dose for the shortest possible duration and to avoid taking more than the recommended maximum daily dose.

Other options for managing pain in people with cirrhosis may include medications such as opioids (e.g., morphine, oxycodone), gabapentin, or tricyclic antidepressants. Again, it is important to consult a healthcare professional to determine the most appropriate treatment approach for you. They will consider factors such as the severity of your pain, the underlying cause of your pain, and any other medical conditions you may have.

58. Can I take Tylenol in cirrhosis? How much Tylenol is allowed in patients with cirrhosis?

It is generally not recommended to take Tylenol (acetaminophen) if you have cirrhosis. This is because Tylenol is metabolized by the liver, and the liver may not function properly in people with cirrhosis. If the liver is not able to properly metabolize Tylenol, it can accumulate in the body and cause serious side effects, including liver damage.

In people with cirrhosis, the recommended daily maximum dose of Tylenol is generally considered to be 2 grams (2000 milligrams) or less. This is because the risk of liver damage increases as the dose of Tylenol increases. It is important to talk to your doctor or pharmacist before taking any medication, including Tylenol, if you have cirrhosis. They can help you determine the appropriate dose and frequency of Tylenol based on your specific circumstances.
Questions

Responses 1

Responses 2

Reviewer 1 grades
1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

Reviewer 2 grades
1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

Reviewer 3 grades for the responses with discrepancies

Cirrhosis is a serious condition that affects the liver and can lead to complications such as hepatic encephalopathy, bleeding, and infections. It is important for people with cirrhosis to be careful about the medications they take, as some medications can be harmful to the liver or may interact with other medications that they are taking.

Some medications that should be avoided in people with cirrhosis include:

Acetaminophen (Tylenol): This is a commonly used pain reliever that is generally safe for most people, but it can be harmful to the liver in large amounts or if it is taken for a long period of time. People with cirrhosis should avoid taking acetaminophen or should use it with caution and only as directed by their healthcare provider.

Nonsteroidal anti-inflammatory drugs (NSAIDs): These medications, which include ibuprofen and naproxen, can cause stomach bleeding and ulcers, and they may also increase the risk of bleeding in people with cirrhosis.

Corticosteroids: These medications, which are used to treat a variety of conditions, can cause fluid retention and increase the risk of bleeding in people with cirrhosis.

Amiodarone: This medication, which is used to treat certain heart conditions, can be harmful to the liver and should be avoided in people with cirrhosis.

It is important to talk to your healthcare provider about all of the medications you are taking, including over-the-counter medications and supplements, to make sure they are safe for you to use. Your healthcare provider can help you determine which medications are safe for you to take and can recommend alternative medications if necessary.

Cirrhosis is a serious condition in which the liver becomes scarred and is unable to function properly. It is important for individuals with cirrhosis to be careful about the medications they take, as some medications can be harmful to the liver or may interact with other medications in a way that could be harmful.

Some common medications that may be harmful for individuals with cirrhosis include:

Nonsteroidal anti-inflammatory drugs (NSAIDs): These include over-the-counter painkillers such as ibuprofen (Advil) and naproxen (Aleve). NSAIDs can cause gastrointestinal bleeding and may be harmful to the liver.

Acetaminophen (Tylenol): While acetaminophen is generally considered safe when taken at recommended doses, it can be harmful to the liver when taken in large amounts or when combined with alcohol.

Statins: These medications, which are used to lower cholesterol, can cause muscle damage and may be harmful to the liver.

Antifungal medications: Some antifungal medications, such as ketoconazole, can be harmful to the liver.

It is important for individuals with cirrhosis to speak with their healthcare provider about all medications they are taking, including over-the-counter medications and supplements. The healthcare provider can help determine which medications are safe to take and which should be avoided.
60. What diet is good for cirrhosis?

Cirrhosis is a serious condition in which scar tissue replaces healthy liver tissue, leading to a loss of function in the liver. It is usually caused by long-term damage from conditions such as alcohol abuse, hepatitis, and nonalcoholic fatty liver disease.

A healthy diet can help manage the symptoms of cirrhosis and support overall health. It is important to follow the recommendations of a healthcare professional and a registered dietitian, as the specific dietary needs may vary depending on the individual's overall health and the stage of their cirrhosis.

Generally, a diet for cirrhosis should include:

- Adequate calories and protein to help maintain strength and prevent malnutrition.
- Foods that are high in nutrients but low in sodium, as a high-sodium diet can worsen swelling in the abdomen and legs. This may include fresh fruits and vegetables, whole grains, and lean proteins such as chicken, fish, and beans.
- Limited amounts of fat, as the liver may have difficulty processing large amounts of fat. Adequate fluids to prevent dehydration and help flush toxins out of the body.
- It is also important to avoid alcohol, as it can further damage the liver.

It is important to note that a healthy diet is just one part of the treatment plan for cirrhosis. It is crucial to follow the recommendations of a healthcare professional and to take any prescribed medications as directed.

61. Will taking supplements help with cirrhosis?

Cirrhosis is a serious condition in which scar tissue replaces healthy liver tissue, leading to impaired liver function. While certain supplements may be helpful in managing some of the symptoms associated with cirrhosis, it is important to note that supplements are not a substitute for medical treatment and should not be used in place of prescribed medications.

If you have cirrhosis, it is important to work closely with your healthcare provider to develop a treatment plan that is appropriate for your specific needs. This may include medications, lifestyle changes, and other therapies to help manage your condition and prevent further liver damage.

Some supplements that may be helpful in managing symptoms associated with cirrhosis include:

- Vitamin K: This vitamin is important for blood clotting and may be recommended for people with cirrhosis who are at risk of bleeding due to low levels of clotting factors produced by the liver.
- Folic acid: This vitamin is important for cell growth and may be recommended for people with cirrhosis to help prevent anemia.
- L-carnitine: This amino acid may be helpful in improving muscle strength and endurance in people with cirrhosis.

It is important to talk to your healthcare provider before taking any supplements, as they may interact with other medications you are taking or have potential side effects. Your healthcare provider can help you determine the best course of treatment for your specific needs.
62. Can cirrhosis affect sexual function?
Yes, cirrhosis can affect sexual function in both men and women. In men, cirrhosis can lead to a decrease in testosterone production, which can cause reduced sex drive and erectile dysfunction. In women, cirrhosis can lead to a decrease in estrogen production, which can cause menopausal symptoms such as vaginal dryness and reduced sex drive.

Cirrhosis can also lead to physical changes that can affect sexual function. For example, people with cirrhosis may experience swelling in the legs and abdomen, which can make physical activity, including sexual activity, more difficult. In addition, cirrhosis can cause fatigue and muscle weakness, which can also affect sexual function.

It is important to talk to a healthcare provider if you are experiencing sexual dysfunction as a result of cirrhosis. There may be treatments available to help manage these symptoms.

63. Can cirrhosis affect fertility?
Yes, cirrhosis can affect fertility in both men and women. In men, cirrhosis can cause low testosterone levels, which can lead to decreased fertility. In women, cirrhosis can cause irregular periods, which can make it difficult to become pregnant. Additionally, cirrhosis can cause scarring of the reproductive organs, which can also affect fertility.

It’s important to note that the effects of cirrhosis on fertility can vary depending on the severity of the liver damage and the underlying cause of the cirrhosis. If you have cirrhosis and are concerned about your fertility, it’s a good idea to discuss your concerns with a healthcare professional. They can provide more specific information and guidance based on your individual situation.

64. Is exercise safe in cirrhosis?
Exercise can be safe and beneficial for people with cirrhosis, a condition in which scar tissue replaces healthy liver tissue, causing the liver to lose its ability to function properly. However, it is important for people with cirrhosis to talk to their healthcare provider before starting or making changes to an exercise routine.

Exercise can help improve physical function and quality of life in people with cirrhosis, but it is important to start slowly and gradually increase the intensity and duration of exercise as tolerated. It is also important to monitor for any signs of worsening liver function or other complications during exercise.

People with cirrhosis may experience fatigue, muscle weakness, and difficulty breathing, which can make exercise more challenging. It is important to listen to your body and stop exercising if you experience any discomfort or difficulty. It may also be helpful to work with a physical therapist or exercise specialist who can help develop a safe and effective exercise plan.

In general, it is important for people with cirrhosis to avoid activities that are excessively strenuous or involve heavy lifting, as these activities can put extra strain on the liver and other organs. Low-impact activities such as walking, swimming, and cycling may be safer and easier to tolerate.

Again, it is important to consult with a healthcare provider before starting or changing an exercise routine if you have cirrhosis. They can help you develop a safe and effective exercise plan that is tailored to your specific needs and abilities.
Cirrhosis is a condition in which the liver becomes scarred and damaged, leading to impaired function and a range of symptoms including muscle loss. There are several potential strategies that may help to improve muscle loss in people with cirrhosis:

- **Exercise**: Exercise can help to build and maintain muscle mass. It is important to consult with a healthcare professional before starting any exercise program, as people with cirrhosis may have limitations on the types and intensity of exercise they can do.

- **Nutritional support**: Proper nutrition is important for maintaining muscle mass. People with cirrhosis may need to consume a higher-calorie diet to support muscle growth and repair. A registered dietitian can help develop a nutrition plan that meets an individual’s needs.

- **Anabolic steroids**: Anabolic steroids are medications that can help to stimulate muscle growth. They may be prescribed to people with cirrhosis who have significant muscle loss. However, these medications can have serious side effects and should be used with caution.

- **Physical therapy**: Physical therapy can help to strengthen muscles and improve mobility. A physical therapist can work with an individual to develop a customized exercise plan.

- **Liver transplant**: In some cases, a liver transplant may be necessary to improve muscle loss in people with cirrhosis. This is typically reserved for those with advanced liver disease who have not responded to other treatments.

It is important to work closely with a healthcare team to determine the best course of treatment for muscle loss in cirrhosis.
Questions

Responses 1

1. Comprehensive

2. Correct but inadequate

3. Mixed with correct and incorrect/outdated data

4. Completely incorrect

Reviewer 1 grades

Reviewer 2 grades

Reviewer 3 grades for the responses with discrepancies

66. What can be done to improve fatigue in cirrhosis? Fatigue is a common symptom in individuals with cirrhosis, a progressive liver disease that can lead to serious complications such as liver failure. There are several things that can be done to help improve fatigue in people with cirrhosis:

- Get enough rest: It is important to get enough sleep and rest to help manage fatigue. It may be helpful to create a sleep schedule and stick to it.
- Exercise regularly: Exercise can help improve energy levels and reduce fatigue. However, it is important to talk to a healthcare provider before starting any new exercise program.
- Eat a healthy diet: A healthy diet that is rich in nutrients can help improve energy levels and reduce fatigue. It is important to eat a balanced diet that includes plenty of fruits, vegetables, whole grains, and protein.
- Avoid alcohol and drugs: Alcohol and drugs can worsen fatigue and other symptoms of cirrhosis. It is important to avoid these substances to improve overall health.
- Manage stress: Stress can worsen fatigue and other symptoms of cirrhosis. It may be helpful to try stress-management techniques such as relaxation techniques, meditation, or exercise.
- Get support: It can be helpful to connect with others who are also dealing with cirrhosis. Support groups can provide a sense of community and can be a source of support and encouragement.
- Talk to a healthcare provider: It is important to speak with a healthcare provider about fatigue and other symptoms of cirrhosis. They can help determine the cause of fatigue and recommend treatment options.

67. What can be done to improve pruritus in cirrhosis? Pruritus, or itching, is a common symptom in cirrhosis, a late stage of liver disease. It can be caused by a variety of factors, including increased levels of certain chemicals in the blood, dry skin, and changes in nerve function.

There are several strategies that may be helpful in improving pruritus in cirrhosis:

- Hydration: Keeping the skin well-moisturized can help alleviate itching. Using a humidifier and taking frequent lukewarm baths or showers can help.
- Avoiding triggers: Certain substances and activities may worsen itching. These can include hot water, scratchy clothing, and certain medications. Avoiding these triggers can help improve pruritus.
- Medications: There are several medications that may be helpful in reducing itching in cirrhosis. These include antihistamines, opioids, and medications that block the actions of certain chemicals in the body.
- Lifestyle changes: Making lifestyle changes, such as quitting smoking and reducing alcohol consumption, may help improve pruritus in cirrhosis.
- Light therapy: Phototherapy, or light therapy, may be helpful in reducing itching in some people with cirrhosis.

It is important to speak with a healthcare professional about the best treatment approach for pruritus in cirrhosis.

Supplementary Table 1. Continued

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<td>Eat a healthy diet: A healthy diet that is rich in nutrients can help improve energy levels and reduce fatigue. It is important to eat a balanced diet that includes plenty of fruits, vegetables, whole grains, and protein.</td>
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<td></td>
<td>Avoid alcohol and drugs: Alcohol and drugs can worsen fatigue and other symptoms of cirrhosis. It is important to avoid these substances to improve overall health.</td>
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<td></td>
<td>Manage stress: Stress can worsen fatigue and other symptoms of cirrhosis. It may be helpful to try stress-management techniques such as relaxation techniques, meditation, or exercise.</td>
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<td></td>
<td>Get support: It can be helpful to connect with others who are also dealing with cirrhosis. Support groups can provide a sense of community and can be a source of support and encouragement.</td>
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<td></td>
<td>Talk to a healthcare provider: It is important to speak with a healthcare provider about fatigue and other symptoms of cirrhosis. They can help determine the cause of fatigue and recommend treatment options.</td>
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<td>67. What can be done to improve pruritus in cirrhosis? Pruritus, or itching, is a common symptom in cirrhosis, a late stage of liver disease. It can be caused by a variety of factors, including increased levels of certain chemicals in the blood, dry skin, and changes in nerve function.</td>
<td></td>
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<td></td>
<td>There are several strategies that may be helpful in improving pruritus in cirrhosis:</td>
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<td></td>
<td>Hydration: Keeping the skin well-moisturized can help alleviate itching. Using a humidifier and taking frequent lukewarm baths or showers can help.</td>
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<td></td>
<td>Avoiding triggers: Certain substances and activities may worsen itching. These can include hot water, scratchy clothing, and certain medications. Avoiding these triggers can help improve pruritus.</td>
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<td></td>
<td>Medications: There are several medications that may be helpful in reducing itching in cirrhosis. These include antihistamines, opioids, and medications that block the actions of certain chemicals in the body.</td>
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<td></td>
<td>Lifestyle changes: Making lifestyle changes, such as quitting smoking and reducing alcohol consumption, may help improve pruritus in cirrhosis.</td>
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<td></td>
<td>Light therapy: Phototherapy, or light therapy, may be helpful in reducing itching in some people with cirrhosis.</td>
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<td></td>
<td>It is important to speak with a healthcare professional about the best treatment approach for pruritus in cirrhosis.</td>
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</table>
Brain fog, or cognitive impairment, is a common symptom in people with cirrhosis, a severe liver disease. It can be caused by several factors, including the accumulation of toxins in the body, inflammation, malnutrition, and anemia.

To improve brain fog in cirrhosis, it is important to address the underlying cause. Some steps that may be helpful include:

- Managing the progression of cirrhosis: This may involve treating the underlying cause of the liver disease, such as viral hepatitis, alcohol abuse, or nonalcoholic fatty liver disease.
- Treating complications of cirrhosis: This may include addressing complications such as ascites (buildup of fluid in the abdomen), encephalopathy (a brain disorder that can cause confusion and loss of consciousness), or bleeding from esophageal varices (enlarged veins in the esophagus).
- Managing nutrition: Malnutrition is common in people with cirrhosis, and can contribute to brain fog. It is important to eat a balanced diet and ensure that you are getting enough protein, vitamins, and minerals.
- Treating anemia: Anemia, or a deficiency of red blood cells, can cause brain fog and other symptoms. It can be treated with iron supplements, erythropoietin (a medication that stimulates the production of red blood cells), or, in severe cases, blood transfusions.
- Avoiding or limiting alcohol: Alcohol can worsen brain fog and other symptoms of cirrhosis. If you have cirrhosis, it is important to limit your alcohol intake or avoid it altogether.
- Getting enough sleep: Adequate sleep is important for overall brain health. Try to get at least 7-8 hours of sleep per night.
- Staying hydrated: Dehydration can contribute to brain fog. It is important to drink plenty of fluids, especially if you have cirrhosis and are at risk of developing ascites.
- Managing stress: Stress can exacerbate brain fog and other symptoms of cirrhosis. It is important to find healthy ways to manage stress, such as through relaxation techniques, exercise, or talking to a mental health professional.

It is important to work with your healthcare team to determine the best approach for managing brain fog in cirrhosis. In some cases, medication may be necessary to manage brain fog and other symptoms.
### Questions

1. What can be done to improve insomnia in cirrhosis?

   Insomnia can be a common symptom in people with cirrhosis, a condition in which the liver is damaged and cannot function properly. There are several things that can be done to improve insomnia in people with cirrhosis:

   - Maintain a consistent sleep schedule: Try to go to bed and wake up at the same time every day, even on weekends.
   - Create a relaxing bedtime routine: Engage in activities that help you relax before bed, such as reading or listening to soothing music.
   - Avoid stimulating activities before bed: Avoid activities that stimulate the brain, such as watching TV or using electronic devices, in the hours leading up to bedtime.
   - Avoid caffeine and alcohol: These substances can disrupt sleep and should be avoided close to bedtime.
   - Avoid napping during the day: While it may be tempting to take a nap during the day to make up for lost sleep, this can actually disrupt your sleep-wake cycle and make it more difficult to fall asleep at night.
   - Get regular exercise: Regular physical activity can help improve sleep quality, but be sure to avoid vigorous exercise close to bedtime.
   - Consider medication: If lifestyle changes are not sufficient to improve your sleep, your doctor may recommend medication to help you sleep. It’s important to discuss the risks and benefits of any medication with your doctor.
   - It’s also important to work with your doctor to manage the underlying cause of your cirrhosis, as this can help improve your overall health and sleep quality.

### Similar

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses 1</th>
<th>Responses 2</th>
<th>Reviewer 1 grades</th>
<th>Reviewer 2 grades</th>
<th>Reviewer 3 grades for the responses with discrepancies</th>
</tr>
</thead>
<tbody>
<tr>
<td>69. What can be done to improve insomnia in cirrhosis?</td>
<td>Insomnia can be a common symptom in people with cirrhosis, a condition in which the liver is damaged and cannot function properly. There are several things that can be done to improve insomnia in people with cirrhosis:</td>
<td>Similar</td>
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</table>

Answer:

- Maintain a consistent sleep schedule: Try to go to bed and wake up at the same time every day, even on weekends.
- Create a relaxing bedtime routine: Engage in activities that help you relax before bed, such as reading or listening to soothing music.
- Avoid stimulating activities before bed: Avoid activities that stimulate the brain, such as watching TV or using electronic devices, in the hours leading up to bedtime.
- Avoid caffeine and alcohol: These substances can disrupt sleep and should be avoided close to bedtime.
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- Get regular exercise: Regular physical activity can help improve sleep quality, but be sure to avoid vigorous exercise close to bedtime.
- Consider medication: If lifestyle changes are not sufficient to improve your sleep, your doctor may recommend medication to help you sleep. It’s important to discuss the risks and benefits of any medication with your doctor.
- It’s also important to work with your doctor to manage the underlying cause of your cirrhosis, as this can help improve your overall health and sleep quality.
Questions | Responses 1 | Responses 2 | Reviewer 1 grades | Reviewer 2 grades | Reviewer 3 grades for the responses with discrepancies
--- | --- | --- | --- | --- | ---
70. What can be done to improve leg swelling in cirrhosis? | Leg swelling, or edema, can be a common symptom in people with cirrhosis, a liver disease that can cause fluid to build up in the body. To improve leg swelling in cirrhosis, some treatment options include: 
Diuretics: These medications, also known as water pills, can help your body get rid of excess fluid by increasing urine production.
Sodium restriction: Limiting your intake of salt can help reduce fluid retention.
Compression stockings: Wearing compression stockings can help improve circulation and reduce swelling in your legs.
Elevation: Keeping your legs elevated above your heart can help reduce swelling.
Exercise: Gentle exercises, such as walking or swimming, can help improve circulation and reduce swelling.
Treatment of underlying cause: Treating the underlying cause of your cirrhosis, such as by managing your alcohol intake or taking medications to control hepatitis, can help improve your overall health and reduce swelling.
It's important to talk to your doctor about the best treatment options for your specific situation. In some cases, more aggressive treatment, such as a procedure to remove excess fluid from the body or a liver transplant, may be necessary to improve leg swelling in cirrhosis. | Similar | 1 | 2 | 1

71. How to manage umbilical hernia from ascites in cirrhosis? | Umbilical hernias can often be managed conservatively with lifestyle modifications, such as avoiding straining during bowel movements and avoiding heavy lifting. It may also be helpful to wear a supportive abdominal binder or garment to help hold the hernia in place and reduce the risk of it becoming larger. If the hernia is causing symptoms or is at risk of becoming incarcerated (when the hernia becomes stuck and unable to be reduced back into the abdomen), it may need to be repaired surgically. This typically involves making an incision in the abdominal wall and pushing the hernia back into place, then closing the opening with sutures or mesh. In the case of ascites (accumulation of fluid in the abdomen) due to cirrhosis (liver disease), treatment will depend on the underlying cause of the ascites and the severity of the condition. Options may include diuretics (medications that help reduce fluid accumulation) and paracentesis (a procedure to remove fluid from the abdomen). In some cases, a shunt may be placed to help drain excess fluid from the abdomen. It is important to work closely with a healthcare provider to determine the most appropriate treatment plan. | Similar | 1 | 2 | 2
### Supplementary Table 1. Continued

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses 1</th>
<th>Responses 2</th>
<th>Reviewer 1 grades</th>
<th>Reviewer 2 grades</th>
<th>Reviewer 3 grades for the responses with discrepancies</th>
</tr>
</thead>
<tbody>
<tr>
<td>72. What are side effects of lactulose? Is there an alternative to lactulose for cirrhosis?</td>
<td>Lactulose is a medication that is used to treat constipation and to reduce the levels of ammonia in the blood. Some common side effects of lactulose include bloating, gas, abdominal cramps, diarrhea, and nausea. These side effects are usually mild and go away on their own after a few days of treatment. There are a few alternatives to lactulose for the treatment of cirrhosis, a condition in which the liver becomes scarred and is unable to function properly. One option is to use a different type of laxative, such as polyethylene glycol (Miralax) or senna. Another option is to use medications that help to reduce the levels of ammonia in the blood, such as lactulose or rifaximin. It is important to speak with a healthcare provider about the best treatment option for your specific situation.</td>
<td>Lactulose is a medication that is used to treat constipation and to reduce the levels of ammonia in the blood in people with liver disease. Some possible side effects of lactulose include bloating, gas, diarrhea, stomach cramps, and nausea. There are several alternative medications that may be used to treat constipation and reduce ammonia levels in people with liver disease, including: Polyethylene glycol (PEG): This is a type of osmotic laxative that works by drawing water into the intestine, which can help to soften the stool and stimulate bowel movements. Rifaximin: This is an antibiotic that is used to reduce the levels of harmful bacteria in the intestine. It may be used in people with liver disease to help prevent the development of hepatic encephalopathy, which is a condition that can occur when high levels of ammonia in the blood cause brain function to become impaired. Lactitol: This is a type of sugar alcohol that is used as a laxative. It works by increasing the amount of water in the intestine, which can help to soften the stool and stimulate bowel movements. Neomycin: This is an antibiotic that is used to reduce the levels of harmful bacteria in the intestine. It may be used in people with liver disease to help prevent the development of hepatic encephalopathy. It's important to note that the appropriate treatment for constipation and liver disease will depend on the specific underlying cause of the problem and the overall health of the individual. It's always a good idea to speak with a healthcare provider to determine the best course of treatment.</td>
<td>2,1</td>
<td>2,2</td>
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<td>73. What is jaundice?</td>
<td>Jaundice is a condition that occurs when there is an excess of bilirubin, a yellowish substance, in the blood. This can cause the skin and whites of the eyes to appear yellow, and it can also lead to yellowing of the whites of the eyes. Jaundice can be caused by a variety of underlying conditions, such as liver disease, problems with the bile ducts, or certain types of anemia. It can also occur in newborn babies due to an immature liver. Treatment for jaundice depends on the underlying cause, but may include medications to remove excess bilirubin from the body or other supportive care.</td>
<td>Similar</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
**Questions**

**Responses 1**

**Responses 2**

**Reviewer 1 grades**

1. Comprehensive  
2. Correct but inadequate  
3. Mixed with correct and incorrect/outdated data  
4. Completely incorrect

**Reviewer 2 grades**

1. Comprehensive  
2. Correct but inadequate  
3. Mixed with correct and incorrect/outdated data  
4. Completely incorrect

**Reviewer 3 grades for the responses with discrepancies**

<table>
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<tr>
<th>Question</th>
<th>Responses 1</th>
<th>Responses 2</th>
<th>Reviewer 1 grades</th>
<th>Reviewer 2 grades</th>
<th>Reviewer 3 grades for the responses with discrepancies</th>
</tr>
</thead>
</table>
| 74. How to tell jaundice in a patient with tanned or dark skin? | Jaundice, also known as hyperbilirubinemia, is a condition that occurs when there is an excess of bilirubin in the blood. Bilirubin is a yellowish substance that is produced when the body breaks down red blood cells. In people with tanned or dark skin, it may be more difficult to recognize the signs of jaundice, as the yellowing of the skin and whites of the eyes may not be as noticeable. However, there are other signs and symptoms that may indicate the presence of jaundice in people with tanned or dark skin, including:  
  - Pale or clay-colored stools: Jaundice can cause the stool to become pale or clay-colored, as the bilirubin is not being properly processed and excreted by the liver.  
  - Dark urine: Jaundice can cause the urine to become darker in color, as the bilirubin is being eliminated through the urine instead of the stool.  
  - Itching: Some people with jaundice may experience itching due to the buildup of bilirubin in the skin.  
  - Fatigue: Jaundice can cause fatigue and weakness due to the body's inability to properly process and utilize red blood cells.  
  - If you suspect that you or someone you know may have jaundice, it is important to see a healthcare provider for a proper diagnosis and treatment. The healthcare provider will perform a physical examination and may order laboratory tests to confirm the presence of jaundice and determine its underlying cause. | Similar | 3 | 2 | 3 |
| 75. Can a female patient with cirrhosis get pregnant? | It is generally not recommended for women with cirrhosis to get pregnant because cirrhosis can significantly impair the functioning of the liver and can affect the ability to carry a pregnancy to term. Pregnancy can also worsen the health of the mother and increase the risk of complications such as preterm labor, bleeding, and high blood pressure.  
In general, it is important for women with cirrhosis to discuss their plans for pregnancy with their healthcare provider. The provider can evaluate the patient's individual situation and determine the best course of action. In some cases, the provider may recommend that the patient wait until the cirrhosis is better controlled before attempting pregnancy. In other cases, the provider may recommend that the patient not get pregnant at all due to the potential risks to both the mother and the baby.  
It is important for women with cirrhosis to carefully consider the potential risks and benefits of pregnancy and to work closely with their healthcare provider to make the best decision for their individual situation. | Similar | 1 | 2 | 1 |
### Questions

**76. How to improve leg cramps in a patient with cirrhosis?**

Leg cramps can be a common symptom in patients with cirrhosis, a type of liver disease that can lead to a build-up of toxins in the body and fluid accumulation in the legs (known as edema). There are several strategies that may help improve leg cramps in a patient with cirrhosis:

- **Exercise:** Gentle stretching exercises can help improve circulation and reduce cramping.
- **Hydration:** Drinking plenty of fluids can help prevent dehydration, which can contribute to cramping.
- **Diet:** A low-sodium diet may help reduce fluid accumulation in the legs and reduce cramping.
- **Medications:** Some medications, such as diuretics, may be used to help reduce fluid accumulation and improve leg cramps.
- **Compression stockings:** Wearing compression stockings can help improve circulation and reduce cramping.

It is important to consult with a healthcare professional for proper diagnosis and treatment of leg cramps in a patient with cirrhosis.

**Responses**

- **Responses 1:**
  - Similar

- **Responses 2:**

**Reviewer 3 grades for the responses with discrepancies:** N/A

### Similarity

**77. How to improve albumin levels in cirrhosis?**

There are several potential approaches to improving albumin levels in cirrhosis:

- **Treat the underlying cause of cirrhosis:** Cirrhosis is often caused by chronic liver diseases such as hepatitis B and C, alcohol abuse, and nonalcoholic fatty liver disease. Treating the underlying cause of cirrhosis may improve albumin levels.
- **Administer albumin replacement therapy:** Albumin replacement therapy involves administering intravenous (IV) albumin to help increase albumin levels in the body. This approach is typically reserved for people with severe cirrhosis who have low albumin levels and are at risk of complications.
- **Nutritional support:** Ensuring that a person with cirrhosis is getting enough nutrients, including protein, can help improve albumin levels. This may involve supplementing the diet with high-protein foods or supplements, or providing nutritional support through tube feeding or parenteral nutrition (IV nutrition).
- **Medications:** There are a number of medications that may be used to improve albumin levels in people with cirrhosis. These include medications that help to improve liver function, such as pentoxifylline and s-adenosylmethionine (SAMe), and medications that help to reduce inflammation and improve protein synthesis, such as steroids and branched-chain amino acids.
- **Lifestyle changes:** Making lifestyle changes, such as quitting smoking, reducing alcohol consumption, and maintaining a healthy weight, may also help to improve albumin levels in people with cirrhosis.

It’s important to note that these approaches should be recommended and monitored by a healthcare provider. It’s also important to remember that improving albumin levels may not be possible in all cases, and that treatment for cirrhosis should be tailored to the individual needs of each patient.

**Responses**

- **Responses 1:**
  - Similar

- **Responses 2:**
  - Reviewer 3 grades for the responses with discrepancies: 1 2 2
### Preventive Medicine

#### 78. Is schedule for other types of cancer screening different to individuals without cirrhosis?

Cancer screening recommendations can vary depending on a person's individual risk factors and medical history. It is generally recommended that people at average risk for cancer undergo certain cancer screenings at certain intervals. However, people with certain medical conditions, such as cirrhosis, may have different recommendations for cancer screening.

Cirrhosis is a condition in which scar tissue replaces healthy liver tissue, and it can increase the risk of certain types of cancer, such as liver cancer. People with cirrhosis may be recommended to undergo more frequent or earlier cancer screenings for certain types of cancer. For example, people with cirrhosis may be recommended to undergo liver cancer screenings more frequently than people without cirrhosis.

It is important for individuals to discuss their cancer screening recommendations with their healthcare provider, taking into account their individual risk factors and medical history. The healthcare provider can help determine the appropriate cancer screening schedule for an individual.

**Reviewer 1 grades**
1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

**Reviewer 2 grades**
1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

**Reviewer 3 grades for the responses with discrepancies**

#### 79. Can patients with decompensated cirrhosis get a COVID vaccine?

Yes, people with decompensated cirrhosis can receive the COVID-19 vaccine. Decompensated cirrhosis is a serious and advanced stage of liver disease, and individuals with this condition are at increased risk for severe illness and complications from COVID-19. It is important for people with decompensated cirrhosis to receive the vaccine to help protect them from the virus.

The Centers for Disease Control and Prevention (CDC) recommends that people with decompensated cirrhosis be included in the priority groups for vaccination, along with other people who are at increased risk for severe illness from COVID-19. The specific priority groups may vary depending on the specific vaccine and the availability of vaccine doses.

It is important to consult with a healthcare provider to determine the best course of action and to address any concerns or questions about the vaccine.

**Reviewer 1 grades**
1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

**Reviewer 2 grades**
1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

**Reviewer 3 grades for the responses with discrepancies**

#### 80. Should liver cancer screening be done in patients with previously cured HCV infection?

It is generally recommended that patients with a history of hepatitis C infection undergo liver cancer screening, as they have an increased risk of developing liver cancer. This is because hepatitis C infection can cause chronic liver inflammation, which can lead to scarring of the liver (cirrhosis) and an increased risk of liver cancer.

The American Cancer Society recommends that people with a history of hepatitis C infection who have never had cirrhosis undergo liver cancer screening every 6 to 12 months. For those with a history of hepatitis C infection and cirrhosis, the recommendation is to undergo liver cancer screening every 6 months.

It is important to note that liver cancer screening is not a substitute for regular medical care and other cancer screening tests. It is also important to follow a healthy lifestyle, such as avoiding tobacco and excessive alcohol consumption, to help reduce the risk of developing liver cancer.

**Reviewer 1 grades**
1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

**Reviewer 2 grades**
1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect

**Reviewer 3 grades for the responses with discrepancies**
Questions
Responses 1
Responses 2
Reviewer 1 grades
1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect
Reviewer 2 grades
1. Comprehensive
2. Correct but inadequate
3. Mixed with correct and incorrect/outdated data
4. Completely incorrect
Reviewer 3 grades for the responses with discrepancies

81. How often should patients with cirrhosis with varices undergo endoscopy?

It is generally recommended that patients with cirrhosis and esophageal varices undergo endoscopy at least every 2 to 3 years to monitor the presence and size of the varices. However, the frequency of endoscopy may be increased if the varices are found to be large or if the patient has a history of bleeding from the varices. In addition, patients who have undergone varical banding or sclerotherapy to treat the varices may need to undergo endoscopy more frequently to monitor the effectiveness of these treatments.

It is important to note that the frequency of endoscopy in patients with cirrhosis and esophageal varices may vary depending on the specific clinical circumstances and the recommendations of the patient's healthcare provider. It is always important for patients with cirrhosis and esophageal varices to follow the treatment recommendations of their healthcare provider to help prevent bleeding and other complications.

The frequency of endoscopy for patients with cirrhosis and varices depends on the size and number of varices and the patient's risk of bleeding. In general, patients with small varices and low risk of bleeding may be monitored with periodic imaging tests, such as ultrasound, to assess the status of their varices. However, patients with larger varices or higher risk of bleeding may require more frequent endoscopy to assess and treat the varices.

The American Association for the Study of Liver Diseases (AASLD) recommends that patients with cirrhosis and large varices (defined as varices with a diameter of at least 5 mm) undergo endoscopy every 1-2 years to assess the varices and perform preventive treatment, such as band ligation or injection sclerotherapy, to reduce the risk of bleeding. In addition, patients with cirrhosis and a history of variceal bleeding may require more frequent endoscopy to monitor and treat the varices.

It is important to note that the frequency of endoscopy may vary depending on the specific circumstances of each patient and the recommendation of their healthcare provider. It is important for patients with cirrhosis and varices to discuss their treatment plan with their healthcare provider and follow their recommendations for monitoring and management of their condition.

82. What is the role of palliative care for patients with cirrhosis?

Palliative care is a type of medical care that focuses on relieving symptoms, improving quality of life, and providing emotional and spiritual support to people with serious illnesses, including cirrhosis. It can be provided at any stage of the disease and can be offered alongside curative treatment.

The goal of palliative care for patients with cirrhosis is to help manage the symptoms and complications of the disease, such as pain, fatigue, nausea, and difficulty breathing, and to provide support for the patient and their family. Palliative care can also help patients with cirrhosis understand their treatment options and make informed decisions about their care.

Palliative care may involve medications to control symptoms, such as pain medication or anti-nausea medication, as well as non-pharmacological approaches, such as relaxation techniques or counseling. Palliative care teams may include doctors, nurses, social workers, chaplains, and other professionals who work together to provide comprehensive care for the patient and their family.

Overall, the role of palliative care in the management of cirrhosis is to help improve the quality of life for patients and their families by addressing the physical, emotional, and spiritual needs of the patient.

Other

82. What is the role of palliative care for patients with cirrhosis?

Palliative care is a type of medical care that focuses on relieving symptoms, improving quality of life, and providing emotional and spiritual support to people with serious illnesses, including cirrhosis. It can be provided at any stage of the disease and can be offered alongside curative treatment.

The goal of palliative care for patients with cirrhosis is to help manage the symptoms and complications of the disease, such as pain, fatigue, nausea, and difficulty breathing, and to provide support for the patient and their family. Palliative care can also help patients with cirrhosis understand their treatment options and make informed decisions about their care.

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Overall, the role of palliative care in the management of cirrhosis is to help improve the quality of life for patients and their families by addressing the physical, emotional, and spiritual needs of the patient.

Supplementary Table 1. Continued
83. What are the symptoms that cirrhosis patients should look out for and go to the emergency room for?

Cirrhosis is a serious condition that can lead to life-threatening complications. If you have cirrhosis, it is important to be aware of the signs and symptoms that may indicate a worsening of your condition or the onset of a complication. You should seek immediate medical attention if you experience any of the following symptoms:

- Abdominal pain or swelling: This can be a sign of fluid accumulation in the abdomen (ascites) or a complication such as hepatitis or pancreatitis.
- Confusion or altered mental status: This can be a sign of hepatic encephalopathy, a condition that occurs when the liver is not able to remove toxins from the blood.
- Unusual bleeding or bruising: Cirrhosis can lead to a decrease in the production of clotting factors, which can cause bleeding and bruising.
- Yellowing of the skin and whites of the eyes (jaundice): This can be a sign of liver failure or a complication such as hepatitis.
- Shortness of breath: This can be a sign of fluid accumulation in the lungs (pulmonary edema) or a complication such as pneumonia.
- Chest pain: This can be a sign of a heart attack or a pulmonary embolism.
- Fainting or feeling lightheaded: This can be a sign of low blood pressure or a complication such as sepsis.

If you experience any of these symptoms, it is important to seek medical attention as soon as possible. Do not wait to see if the symptoms resolve on their own.

84. What are the side effects of liver biopsy? How long does it take to recover from a liver biopsy, according to the type of biopsy?

A liver biopsy is a medical procedure in which a small sample of liver tissue is removed and examined under a microscope. It is usually done to diagnose a liver condition or to monitor the effectiveness of treatment. There are several types of liver biopsy procedures, including percutaneous (through the skin), transvenous (through a vein), laparoscopic (through small incisions in the abdomen), and open (through a larger incision in the abdomen). The specific side effects and recovery time may vary depending on the type of biopsy and the individual patient.

Common side effects of a liver biopsy may include pain or discomfort at the biopsy site, bleeding or bruising, and dizziness or fainting. These side effects are usually temporary and can be managed with medication.

In general, recovery from a liver biopsy takes a few days to a week. You may be advised to rest for a few days and avoid strenuous activities until you feel better. You may also be given specific instructions on caring for the biopsy site and when to resume your normal activities.

It is important to follow your healthcare provider’s instructions and report any unusual symptoms or concerns to them. They will be able to provide you with more information on the specific side effects and recovery time for your particular liver biopsy procedure.
Does liver cirrhosis increase the risk for falls and fractures?

86. Does the liver heal itself?

87. Will the liver function of a patient with liver cirrhosis ever become normal?

88. Does liver cirrhosis increase the risk for falls and fractures?

A cirrhotic liver is one that has been significantly damaged and scarred, and it is not able to regenerate or repair itself in the same way that a healthy liver can. However, the liver is a resilient organ and it can still function to some extent even when it is scarred and damaged. In some cases, treatment can help to slow the progression of liver cirrhosis and may even improve liver function. However, a liver that has been severely damaged by cirrhosis will not be able to regenerate or repair itself completely.

Yes, liver cirrhosis can increase the risk for falls and fractures. One of the complications of liver cirrhosis is the development of osteoporosis, which is a condition that causes the bones to become weak and brittle. This can increase the risk for falls and fractures, especially in older individuals. Other factors that can contribute to the risk for falls and fractures in people with liver cirrhosis include muscle weakness, balance problems, and changes in blood pressure that can cause dizziness or fainting. It is important for individuals with liver cirrhosis to be aware of these risks and to take steps to prevent falls and fractures, such as getting regular exercise to strengthen the muscles and bones, avoiding activities that may be risky, and using assistive devices if necessary.
### Restless Leg Syndrome in Liver Cirrhosis

Restless leg syndrome (RLS) is a neurological disorder that causes an overwhelming urge to move the legs, usually because of an uncomfortable sensation. It can be a symptom of liver cirrhosis, and it can also be caused by other factors such as iron deficiency, kidney failure, or nerve damage.

Treatment for RLS in liver cirrhosis patients may include medications to help reduce the symptoms of RLS, such as dopaminergic agents (e.g., pramipexole, ropinirole) or benzodiazepines (e.g., clonazepam). Other treatments that may help alleviate RLS symptoms include lifestyle changes, such as practicing good sleep hygiene and avoiding caffeine and alcohol. It is important for liver cirrhosis patients to discuss treatment options with their doctor, as the underlying cause of their RLS may need to be addressed in order to effectively manage the condition.

### Treatment for RLS in Liver Cirrhosis Patients

Treatment for RLS in people with liver cirrhosis may involve medications to address the underlying cause of the RLS, such as iron deficiency or uremia. In some cases, medications that are commonly used to treat RLS, such as dopamine agonists or opioid painkillers, may not be suitable for people with liver cirrhosis due to potential liver toxicity or interactions with other medications that the individual may be taking.

It may also be helpful to implement lifestyle changes that can help to manage RLS symptoms, such as:

- Avoiding caffeine and alcohol
- Engaging in regular physical activity
- Getting enough sleep
- Using relaxation techniques, such as meditation or deep breathing, to help you relax
- Massaging your legs or applying heat to your legs before bedtime

Again, it is important to speak with your healthcare provider for proper evaluation and treatment.

### Can Patients with Liver Cirrhosis Take Melatonin for Sleep?

There is no information available to indicate that melatonin is harmful for people with liver cirrhosis, and it may be safe for use as a sleep aid in this population. However, it is important to note that melatonin is not a substitute for proper medical treatment and that any decisions regarding the use of melatonin or any other supplement should be made in consultation with a healthcare provider. Additionally, it is always a good idea to inform your healthcare provider about all medications and supplements you are taking to ensure that they are safe and appropriate for you.

It is generally not recommended for patients with liver cirrhosis to take melatonin for sleep. Melatonin is metabolized in the liver, and patients with liver cirrhosis may have difficulty metabolizing and eliminating melatonin from the body. This can lead to high levels of melatonin in the body and potentially harmful side effects.

Additionally, patients with liver cirrhosis may be more sensitive to the sedative effects of melatonin, which can further impair liver function. It is important for patients with liver cirrhosis to discuss their sleep concerns with their healthcare provider and to consider other treatment options that may be safer and more appropriate for their condition.

### Supplementary Table 1: Continued

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses 1</th>
<th>Responses 2</th>
<th>Reviewer 1 grades</th>
<th>Reviewer 2 grades</th>
<th>Reviewer 3 grades for the responses with discrepancies</th>
</tr>
</thead>
<tbody>
<tr>
<td>89. Can a patient with liver cirrhosis drive a car if they have encephalopathy?</td>
<td>It is generally not safe for a patient with liver cirrhosis and encephalopathy to drive a car. Encephalopathy is a condition that affects brain function and can cause confusion, drowsiness, and other changes in mental function. These symptoms can interfere with a person’s ability to safely operate a vehicle. It is important for individuals with encephalopathy to be under the care of a healthcare provider and to follow their recommendations, which may include not driving a car. If you have liver cirrhosis and encephalopathy, it is best to consult with your healthcare provider about your specific situation and whether it is safe for you to drive.</td>
<td>It is not recommended for a patient with liver cirrhosis and hepatic encephalopathy to drive a car due to the potential for impaired judgment, coordination, and reaction time. It is important for the safety of the patient and others on the road that they do not operate a vehicle while experiencing these symptoms. It is also important to note that some states have laws prohibiting individuals with certain medical conditions from driving, and it is the responsibility of the patient to abide by these laws.</td>
<td>2,1</td>
<td>2,2</td>
<td>1,1</td>
</tr>
<tr>
<td>90. What can be done for liver cirrhosis patients if they have restless legs at night?</td>
<td>Restless leg syndrome (RLS) is a disorder that causes an uncontrollable urge to move your legs, usually because of an uncomfortable sensation. It can be a symptom of liver cirrhosis, and it can also be caused by other factors such as iron deficiency, kidney failure, or nerve damage. Treatment for RLS in liver cirrhosis patients may include medications to help reduce the symptoms of RLS, such as dopaminergic agents (e.g., pramipexole, ropinirole) or benzodiazepines (e.g., clonazepam). Other treatments that may help alleviate RLS symptoms include lifestyle changes, such as practicing good sleep hygiene and avoiding caffeine and alcohol. It is important for liver cirrhosis patients to discuss treatment options with their doctor, as the underlying cause of their RLS may need to be addressed in order to effectively manage the condition.</td>
<td>Restless leg syndrome (RLS) is a neurological disorder that causes an overwhelming urge to move the legs. It can be a symptom of liver cirrhosis, as well as other underlying medical conditions. If you have liver cirrhosis and are experiencing restless leg syndrome, it is important to speak with your healthcare provider for proper evaluation and treatment. Treatment for RLS in people with liver cirrhosis may involve medications to address the underlying cause of the RLS, such as iron deficiency or uremia. In some cases, medications that are commonly used to treat RLS, such as dopamine agonists or opioid painkillers, may not be suitable for people with liver cirrhosis due to potential liver toxicity or interactions with other medications that the individual may be taking. It may also be helpful to implement lifestyle changes that can help to manage RLS symptoms, such as: Avoiding caffeine and alcohol Engaging in regular physical activity Getting enough sleep Using relaxation techniques, such as meditation or deep breathing, to help you relax Massaging your legs or applying heat to your legs before bedtime Again, it is important to speak with your healthcare provider for proper evaluation and treatment of RLS in the context of liver cirrhosis.</td>
<td>3,1</td>
<td>2,2</td>
<td>3,1</td>
</tr>
<tr>
<td>91. Can patients with liver cirrhosis take melatonin for sleep?</td>
<td>There is no information available to indicate that melatonin is harmful for people with liver cirrhosis, and it may be safe for use as a sleep aid in this population. However, it is important to note that melatonin is not a substitute for proper medical treatment and that any decisions regarding the use of melatonin or any other supplement should be made in consultation with a healthcare provider. Additionally, it is always a good idea to inform your healthcare provider about all medications and supplements you are taking to ensure that they are safe and appropriate for you.</td>
<td>It is generally not recommended for patients with liver cirrhosis to take melatonin for sleep. Melatonin is metabolized in the liver, and patients with liver cirrhosis may have difficulty metabolizing and eliminating melatonin from the body. This can lead to high levels of melatonin in the body and potentially harmful side effects. Additionally, patients with liver cirrhosis may be more sensitive to the sedative effects of melatonin, which can further impair liver function. It is important for patients with liver cirrhosis to discuss their sleep concerns with their healthcare provider and to consider other treatment options that may be safer and more appropriate for their condition.</td>
<td>1,3</td>
<td>2,3</td>
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