

Diagnosis and Treatment of Hepatitis C: Review Questions

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QUESTIONS

Choose the single best answer for each question.

- All of the following may be risk factors for the development of hepatitis C EXCEPT:**
 - History of intravenous drug use
 - Blood transfusion after 1990
 - Incarceration
 - Multiple sexual partners
 - Tattoos
- Which of the following statements regarding hepatitis C is TRUE?**
 - The alanine transaminase (ALT) level is almost always elevated in patients with chronic hepatitis C.
 - ALT levels are almost always normal in patients with hepatitis C.
 - ALT levels vary in a sawtooth pattern, often including normal values, in patients with hepatitis C.
 - An ALT level of 1000 to 5000 U/L is common in patients with chronic hepatitis C.
 - Decreased serum albumin and elevated serum bilirubin levels are sensitive and specific for the diagnosis of chronic hepatitis C.
- Which of the following tests is most appropriate for confirming hepatitis C in a patient with elevated ALT and risk factors for the disease?**
 - Aspartate transaminase (AST)
 - Enzyme immunosorbent assay (EIA-2)
 - Recombinant immunoblot assay (RIBA-2)
 - Liver biopsy
 - Hepatitis C RNA by polymerase chain reaction (PCR)
- Which of the following treatments for patients with chronic hepatitis C without hepatic decompensation is both the most efficacious and approved by the United States Food and Drug Administration?**
 - Interferon alpha-2b
 - Interferon- α
 - Interferon/ribavirin combination therapy
 - Lamivudine
 - Prednisone
- Complications of interferon/ribavirin combination therapy for hepatitis C include:**
 - Anemia
 - Fatigue, malaise, and flu-like syndrome
 - Thrombocytopenia
 - Granulocytopenia
 - All of the above
- A male patient with hepatitis C is receiving interferon/ribavirin combination therapy, and his viral load is reevaluated after 3 months of therapy. The viral load is reduced by 2 logs, but has still not normalized. Which of the following is the best next step?**
 - Discontinue all therapy
 - Increase the dose of ribavirin
 - Continue with therapy and recheck viral load after 6 months of therapy
 - Increase the dose of interferon
 - Discontinue the ribavirin and continue patient on long-term, low-dose interferon

(turn page for answers)

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EXPLANATION OF ANSWERS

1. **(B) Blood transfusion after 1990.** Blood donations have been screened for hepatitis C since 1990. Before 1990, the risk of contracting hepatitis C per unit of packed red blood cells infused was 5%. Current blood bank screening has reduced the risk of transmitting hepatitis C through a blood transfusion to less than 1%. Incarceration and activities that expose the patient to blood products parenterally (intravenous drug use, multiple sexual partners, tattoos) are the risk factors for acquiring hepatitis C.
2. **(C) ALT levels vary in a sawtooth pattern, often including normal values, in patients with hepatitis C.** The ALT levels in patients with chronic hepatitis C follow a characteristic sawtooth pattern. Although high values of ALT occur (albeit rarely) in cases of acute hepatitis C, high ALT values do not usually occur in patients with chronic hepatitis C. Albumin and bilirubin levels are usually normal in patients with hepatitis C, except in patients with advanced disease with cirrhosis.
3. **(B) Enzyme immunosorbent assay (EIA-2).** AST is a nonspecific indicator of hepatopathology and is found in many other disease states. Hepatitis C RNA noted on PCR is a very specific finding; however, this test is expensive. Therefore, PCR should be used to monitor the efficacy of therapy, but should not be used for screening. Liver biopsy is not diagnostic but is useful for determining the stage of liver disease and comorbid hepatopathology. RIBA-2 is more expensive than EIA-2 and should not be used for routine screening.
4. **(C) Interferon/ribavirin combination therapy.** The combination of interferon and ribavirin is approximately three to 10 times more effective than interferon alone in inducing a durable response in both patients who are interferon-naïve and patients who have relapsed after interferon therapy. Lamivudine is indicated for hepatitis B, but not for hepatitis C. Prednisone may advance the disease and worsen the patient's illness.
5. **(E) All of the above (anemia; fatigue, malaise, and flu-like syndrome; thrombocytopenia, granulocytopenia).** Patients undergoing interferon therapy may develop a flu-like syndrome of fatigue, malaise, arthralgia, myalgia, fever, and chills. The addition of ribavirin leads to an average maximal decrease in hemoglobin of 3 g/dL. Patients on this drug regimen should adhere to a rigid protocol for follow-up.
6. **(C) Continue with therapy and recheck viral load after 6 months of therapy.** The 3-month viral response is a good predictor of sustained virologic response in patients receiving monotherapy. However, in the registration trials for interferon/ribavirin therapy, a number of patients first became PCR negative between months three and six of therapy, and later became sustained virologic responders after a total of 12 months of therapy. In these trials, all sustained responders to interferon monotherapy were PCR negative by month three.

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