



NATIONAL HEMOPHILIA FOUNDATION

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MASAC Recommendation # 223
(Replaces Document #98)

MASAC RECOMMENDATIONS ON LIVER BIOPSY IN INDIVIDUALS WITH HEMOPHILIA

The following recommendations were approved by the Medical and Scientific Advisory Council (MASAC) of the National Hemophilia Foundation on October 5, 2013, and adopted by the NHF Board of Directors on October 6, 2013.

Indications and Safety Considerations

Individuals with hemophilia who have been treated with plasma-derived clotting factor concentrates are at risk for infection with hepatitis B and C. In this group, over 80% of adults have been infected with hepatitis C, and increasing numbers are developing end-stage liver disease. Liver biopsy has been performed in individuals with hepatitis or acute or chronic liver disease for diagnosis or to establish the extent and severity of liver disease. [1, 2] The specific indications may include persistently abnormal liver function tests, hepatomegaly, suspected systemic disease involving the liver, or liver cancer.

Non-invasive tests are now available to assess the severity of chronic liver disease due to viral hepatitis. These tests include laboratory tests for presence of liver fibrosis and imaging tests of liver stiffness. These non-invasive tests may be the preferred way to assess the severity of liver disease in individuals with bleeding disorders. However, in cases where the non-invasive tests are inconclusive, a liver biopsy may be necessary. [3]

If a liver biopsy is to be performed, individuals with hemophilia may be at increased risk of bleeding because of their underlying coagulation defect and because of potential additional coagulopathies such as the coagulopathy associated with liver disease, drugs, or other conditions. For these reasons, individuals with hemophilia should be evaluated by hematologists with expertise in coagulation disorders prior to undergoing a liver biopsy.

The evaluation prior to liver biopsy should include prothrombin time (PT), platelet count, and inhibitor screen/titer. In addition, information should be obtained regarding past hepatitis and liver function tests that are obtained as part of comprehensive hemophilia care. A list of current medications should be determined, with specific attention to drugs that may cause vitamin K deficiency or platelet dysfunction. Concomitant factors that may increase bleeding risk should be assessed, including the presence of portal hypertension, thrombocytopenia, vitamin K deficiency, or analgesics that can cause platelet dysfunction.

Specific safety considerations include the correction of any concomitant coagulopathy prior to the liver biopsy procedure, for example, discontinuing nonsteroidal anti-inflammatory agents or correcting vitamin K deficiency. In addition, consideration should be given to the less invasive transjugular biopsy technique, [4] which is associated with a lower risk of peritoneal bleeding.

[4, 5] The hematologist should seek information regarding the potential for transjugular biopsy and the safety record for this procedure at the specific institution and discuss this information with the patient to assist in decision-making. Finally, consideration should be made about whether information from the biopsy will affect treatment or long-term management.

Recommendations for Managing Percutaneous or Transjugular Liver Biopsy

1. Individuals with hemophilia or another bleeding disorder should be evaluated by a hematologist with expertise in coagulation disorders prior to the biopsy.
 - a. The patient's medication list should be reviewed for medications that may enhance bleeding tendency, e.g. nonsteroidal anti-inflammatory agents, and where possible such agents should be discontinued.
 - b. The prothrombin time (PT) and platelet count should be checked prior to the procedure.
 - c. Vitamin K and platelets should be given preoperatively as needed to correct the PT and platelet count towards normal.
2. The liver biopsy should be performed as an in-patient procedure.
3. Immediately prior to the procedure, that is, within 5 to 10 minutes of the procedure, clotting factor should be infused to correct the factor level to 100%.
4. An activated partial thromboplastin time (APTT) may be drawn 10 to 15 minutes after the infusion to help with future management.
5. Following the procedure, the hemoglobin, hematocrit, and volume of blood loss during the procedure should be determined.
6. Additional doses of factor should be given after the procedure at the hematologist's discretion. Additional doses of vitamin K and plasma may be given as well.

REFERENCES

- 1) Schiff L, Schiff ER. Diseases of the Liver, 7th edition. Philadelphia, Lippincott, 1993.
- 2) Zakim D, Boyer TD. Hepatology: A Textbook of Liver Disease, 3rd edition. Philadelphia, Saunders, 1996.
- 3) Perrillo RP. The role of liver biopsy in hepatitis C. Hepatology 1997; 26 (Suppl 1): 57S-61S.
- 4) Little AF, Zajko AB, Orons PD. Transjugular liver biopsy: a prospective study in 43 patients with the Quick-Core biopsy needle. J Vir 1996; 7: 127-31.
- 5) Wong VS, Baglin T, Beacham E, et al. The role for liver biopsy in haemophiliacs infected with the hepatitis C virus. Br J Haematol 1997; 97: 343-7.