Liver Cancer Screening

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Note: The screening technique should be performed with a consistent technique and process.

INTIAL ASSESSMENT

Screen all patients for hepatitis B and/or C in accordance with national recommendations

RISK FACTORS

Low risk: Those patients that do not meet the criteria for intermediate or increased risk

Intermediate risk:
- Chronic hepatitis C infection
- Primary biliary cirrhosis (PBC)
- Inherited metabolic disease
  - Hemochromatosis
  - Alpha-1 antitrypsin deficiency
  - Glycogen storage disease
  - Porphyria cutanea tarda
  - Tyrosinemia
- Autoimmune hepatitis
- Non-alcoholic fatty liver disease (NAFLD)

Intermediate risk:
- Known diagnosis of cirrhosis from any cause
- Chronic hepatitis B infection

SCREENING

Evaluation by clinician experienced in the management of chronic liver disease
- Baseline liver ultrasound with shear wave elastography (SWE)

New diagnosis of cirrhosis or chronic HCV with stage III fibrosis?

No

Yes

Screening every 6 months with:
- Liver ultrasound
- Alpha-fetoprotein (AFP)

1 See Appendix A and C for hepatitis B and C virus screening.
2 See Appendix A and B for hepatitis C virus (HCV)
3 Diagnosis of cirrhosis based on imaging and pathology
4 See Appendix C and D for hepatitis B virus (HBV)
5 These patients require management by an experienced clinician
6 AFP as a sole screening marker is inadequate
APPENDIX A: Persons for Whom HCV Screening is Recommended

Persons for whom HCV screening is recommended:
- Adults aged 18 to 79 years
- All new patients
- All hematopoietic stem cell transplant candidates
- For other cancer patients, consider screening patients who belong to groups at heightened risk of HCV infection (see below)

Risk factors associated with HCV infection:
- Persons born during 1945-1965
- Persons who have injected illicit drugs in the recent or remote past, including those who injected only once and do not consider themselves to be drug users
- Persons with conditions associated with high prevalence of HCV infection including:
  - Persons with HIV infection
  - Persons with hemophilia who received clotting factor concentrates prior to 1987
  - Persons who have ever been on hemodialysis
  - Persons with unexplained abnormal aminotransferase levels
- Prior recipients of transfusions or organ transplants prior to July 1992 including:
  - Persons who were notified that they had received blood from a donor who later tested positive for HCV infection
  - Persons who received a transfusion of blood or blood products
  - Persons who received an organ transplant
- Children born to HCV-infected mothers
- Health care, emergency medical and public safety workers after a needle stick injury or mucosal exposure to HCV-positive blood
- Current sexual partners of HCV-infected persons

APPENDIX B: Test Used to Screen and Diagnose HCV

Test used to screen for HCV:
- Antibody to HCV (anti-HCV)
Diagnostic work up and therapy should be undertaken by providers experienced in management of viral hepatitis in close collaboration with primary teams.

Test used to diagnose HCV:
- HCV RNA level

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1 In alignment with CDC, US Preventive Services Task Force, and other professional societies best practice guidelines for population health. This is standard practice in our hematologic patient populations that has now expanded to other services to benefit more patients. PCP-General teams may opt out of screening.

2 Although these are reported risk factors, the national recommendation is for universal HCV screening.

3 Although the prevalence of infection is low, a negative test in the partner provides reassurance, making testing of sexual partners of benefit in clinical practice.
APPENDIX C: Persons for Whom HBV Screening is Recommended

Individuals born in areas of high\(^1\) and intermediate\(^2\) prevalence rates for HBV including immigrants and adopted children\(^3,4\)

- Asia: All countries
- Africa: All countries
- South Pacific Islands: All countries
- Middle East (except Cyprus and Israel)
- European Mediterranean: Malta and Spain
- The Arctic (indigenous populations of Alaska, Canada, and Greenland)
- South America: Ecuador, Guyana, Suriname, Venezuela and Amazon regions of Bolivia, Brazil, Colombia and Peru
- Eastern Europe: All countries except Hungary
- Caribbean: Antigua and Barbuda, Dominica, Granada, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, and Turks and Caicos
- Central America: Guatemala and Honduras

Other groups recommended for screening

- U.S. born persons not vaccinated as infants whose parents were born in regions with high HBV endemicity (\(\geq 8\%\))
- Household and sexual contacts of HBsAg-positive persons\(^4\)
- Persons who have ever injected drugs\(^4\)
- Persons with multiple sexual partners or history of sexually transmitted disease\(^4\)
- Men who have sex with men\(^4\)
- Inmates of correctional facilities\(^4\)
- Individuals with chronically elevated ALT or AST\(^4\)
- Individuals infected with HCV or HIV\(^4\)
- Patients undergoing renal dialysis\(^4\)
- All pregnant women
- Persons needing immunosuppressive therapy (see Hepatitis B Virus (HBV) Screening and Management algorithm)

\(^1\) HBsAg prevalence 8\%  \(^2\) HBsAg prevalence 2%-7\%  \(^3\) If HBsAg-positive persons are found in the first generation, subsequent generations should be tested  \(^4\) Those who are seronegative should receive hepatitis B vaccine

APPENDIX D: Tests to Screen and Confirm HBV Diagnosis

Tests used to screen for HBV:

- Hepatitis B surface antigen – HBsAg
- Hepatitis B surface antibody – anti-HBs
- Hepatitis B core antibody (total Ig or IgG, not IgM) – anti-HBc

Diagnostic work up and therapy should be undertaken by providers experienced in management of viral hepatitis in close collaboration with primary teams.

Test used to confirm HBV diagnosis:

- HBV DNA level
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SUGGESTED READINGS


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DEVELOPMENT CREDITS

This screening algorithm is based on majority expert opinion of the Liver Screening workgroup at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

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