Hepatitis B Virus (HBV) Screening and Management

**PRESENTATION**

Consider annual re-testing in patients anticipating new systemic anticancer therapy. Test patients prior to first dose of IVIG.

**TEST RESULTS**

1. **HBsAg+/anti-HBc+ (chronic infection)**
   - Systemic anticancer therapy (cytotoxic, immunotherapy, or targeted therapy)

2. **HBsAg-/anti-HBc+ (past infection)**
   - Check HBV DNA and ALT at baseline and every 6 months during antiviral therapy
   - After anticancer therapy, monitor ALT for hepatitis flares after stopping antiviral therapy
   - Refer to Liver Cancer Screening algorithm for additional information

3. **HBsAg-/anti-HBc-**
   - No antiviral prophylaxis unless antiviral treatment is needed independent of anticancer therapy
   - Consult HBV specialist for consideration of long-term antiviral therapy

**ANTICANCER THERAPY**

Hepatitis flare: ALT >100 U/L and 3 times the baseline

1. Order HBsAg, anti-HBc, and anti-HBs tests

2. Review any outside records/past labs if patient is transferring care or started systemic anti-cancer treatment elsewhere

3. See Appendix A for Antiviral Therapy for anti-HBV

**RECOMMENDED ANTIVIRAL TREATMENT**

- Start antiviral prophylaxis and continue for at least 12 months after the last anticancer therapy
- Consider consult to HBV specialist for initial and long-term management

**MONITORING**

- Anti-HBs+: previously vaccinated; no intervention needed
- Anti-HBs-: not immune; susceptible for HBV infection
  - Consider HBV vaccination if clinically warranted. No immediate intervention indicated during active systemic anticancer therapy.

IVIG = intravenous immune globulin
HBsAg = hepatitis B surface antigen
anti-HBc = hepatitis B core antibody (total Ig or IgG, not IgM)
anti-HBs = hepatitis B surface antibody

1. Consider annual re-testing in patients anticipating new systemic anticancer therapy. Test patients prior to first dose of IVIG.
2. Review any outside records/past labs if patient is transferring care or started systemic anti-cancer treatment elsewhere
3. See Appendix A for Antiviral Therapy for anti-HBV
4. HBV specialists are with the following consulting services: Hepatology, General Internal Medicine, or Infectious Diseases

5. Hepatitis flare: ALT >100 U/L and 3 times the baseline
6. If immunosuppressive treatment is chosen in the future, then risks of HBV reactivation should be discussed with patient/caregiver
7. Independent of hepatitis B surface antibody status

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Department of Clinical Effectiveness V2

Approved by the Executive Committee of the Medical Staff on 12/13/2023
Hepatitis B Virus (HBV) Screening and Management

Disclaimer: This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson's specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient's care. This algorithm should not be used to treat pregnant women.

### TEST RESULTS

<table>
<thead>
<tr>
<th>HBsAg-/anti-HBc+1 (past infection)</th>
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<tbody>
<tr>
<td>Anti-CD20 therapy, stem cell transplantation (SCT)2, or CAR T-cell therapy</td>
</tr>
<tr>
<td>All other systemic anticancer therapy (cytotoxic, immunotherapy, or targeted therapy)</td>
</tr>
<tr>
<td>Hormonal anticancer therapy alone</td>
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</table>

### ANTICANCER THERAPY

| Anti-CD20 therapy, stem cell transplantation (SCT)², or CAR T-cell therapy |
| All other systemic anticancer therapy (cytotoxic, immunotherapy, or targeted therapy) |
| Hormonal anticancer therapy alone |

### RECOMMENDED ANTIVIRAL TREATMENT

- **Anti-CD20 therapy, stem cell transplantation (SCT)², or CAR T-cell therapy**
  - Start antiviral prophylaxis³ and continue for at least 12 months after the last anticancer therapy⁴
- **All other systemic anticancer therapy (cytotoxic, immunotherapy, or targeted therapy)**
  - No antiviral prophylaxis needed; monitor
- **Hormonal anticancer therapy alone**
  - No antiviral prophylaxis³ unless antiviral treatment is needed independent of anticancer therapy

### MONITORING

- **Check HBsAg and ALT every 6 months during antiviral therapy**
- **After anticancer therapy, monitor ALT for hepatitis flares⁵ after stopping antiviral therapy**

- **Check HBsAg and ALT every 3 months during anticancer therapy**
  - If HBsAg+, then start antiviral therapy³ immediately
  - If hepatitis flare⁵, check HBV DNA and contact HBV specialists⁶ if detectable

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1 Independent of hepatitis B surface antibody status
2 Refer to MDA internal SCT guidelines for Hepatitis A, B, C, and E: Prevention and Treatment in SCTCT
3 See Appendix A for Antiviral Therapy for anti-HBV
4 For patients receiving CAR T-cell therapy, an alternate option is to monitor ALT, HBsAg, and HBV DNA every 1-3 months with immediate antiviral therapy at the earliest sign of HBV reactivation, if the patient and provider can adhere to frequent follow-up visits for up to 12 months after CAR T-cell therapy. Ideally, HBV specialists should co-manage these patients.
5 Hepatitis flare: ALT >100 U/L and 3 times the baseline
6 HBV specialists are with the following consulting services: Hepatology, General Internal Medicine, or Infectious Diseases

CAR T-cell therapy = chimeric antigen receptor T-cell therapy

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APPENDIX A: Antiviral Therapy

Recommended anti-HBV medications (to be used as monotherapy):

- Entecavir
- Tenofovir alafenamide
- Tenofovir disoproxil fumarate

While there are several anti-HBV medications, entecavir, tenofovir alafenamide, and tenofovir disoproxil fumarate are recommended due to low risk of viral resistance as well as strong efficacy data on patients receiving anticancer therapy at risk for HBV reactivation. Co-management of HBV patients by oncology teams and HBV experts is recommended.

1 HIV testing is recommended prior to the initiation of anti-HBV therapy, as per standard of care and to avoid monotherapy for HIV infection, if present
2 For suggested dosing for the 3 recommended anti-HBV medications, refer to the AASLD 2018 Hepatitis B Guidance
**SUGGESTED READINGS**


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