### PART I: Management of HBsAg– anti-HBc+ Patients Receiving Immunosuppression (anti-HBs– or +)

<table>
<thead>
<tr>
<th>Type of Immunosuppression</th>
<th>Prophylaxis?</th>
<th>Duration of Prophylaxis</th>
<th>Monitoring (HBsAg, HBV DNA, ALT)</th>
</tr>
</thead>
</table>
| **High risk of Reactivation (>10%)** | Yes | • 24 mo after last dose of rituximab or after CAR T cell infusion  
   • At least 2 years after HSCT or after completion of myelosuppressive chemo for heme malignancy (consider indefinite ppx) | q3mo until 1 yr after ppx is stopped |
| • B-cell depleting agents (e.g., rituximab)  
• HSCT (auto or allo)  
• CAR T cell therapy  
• Hematologic malignancy with myelosuppressive chemotherapy | | | |
| **Moderate risk of Reactivation (1-10%)** | Yes (this is a controversial area given risk of reactivation is not clearly defined for this population; monitoring with q3mo HBsAg, ALT, and HBV DNA and "on-demand" therapy can also be considered) | • 6 mo after last dose of immunosuppression  
   • For SOT recipients:  
     o 12 mo for non-liver SOT recipients  
     (Thymoglobulin treatment for rejection should restart the clock. Pulse dose steroids for rejection should extend prophylaxis for an additional 6 months.)  
     o No ppx for liver SOT recipients² | q3mo until 1 yr after ppx is stopped  
(or equivalent time period if monitoring only) |
| • Anti-TNF inhibitors  
• Cytokine or integrin inhibitors (e.g., abatacept, ustekinumab, natalizumab, vedolizumab)  
• Tyrosine kinase inhibitors (e.g., imatinib, nilotinib)  
• Steroids (≥10mg/d prednisone x ≥4 wks)  
• Anthracyclines (e.g., doxorubicin)  
• SOT recipients | | | |
| **Low risk of reactivation (<1%)** | No | n/a | q3mo x 6 mo after last dose of immunosuppression |
| • Azathioprine, methotrexate  
• <10mg prednisone for ≥4 weeks | | | |

¹Hepatology should be consulted for patients who are HBsAg+ and undergoing immunosuppression.  
²Liver SOT recipients of an anti-HBc+ donor receive life-long prophylaxis with lamivudine 100 mg po daily, adjusted for renal function, as per post-liver transplant protocol. Entecavir, TDF, or TAF are also acceptable but LAM is preferred due to its low cost and need for lifelong prophylaxis.

### General Principles for Prophylaxis
- Entecavir is the preferred antiviral (TDF or TAF are also first line agents, but used less commonly); Lamivudine is considered second line given high risk of resistance. Prophylactic dosing of entecavir is 0.5mg PO daily in patients ≥ 16 years (needs renal dosing adjustment if CrCl <50).
- The presence of anti-HBs is not protective against reactivation and should not influence prophylaxis decisions.
- Prophylaxis, when given, should be started as soon as possible before (when possible) or simultaneously with the onset of immunosuppression.
- For HIV-positive patients requiring prophylaxis: follow DHHS guidelines for the treatment of HIV/HBV coinfection: use tenofovir (TDF or TAF) with FTC or 3TC. If TDF or TAF cannot be used, then use entecavir with a fully suppressive ARV regimen. Do not use 3TC or FTC alone for prophylaxis given the risk of resistance.
### PART II: Management of HBsAg– and anti-HBc– Transplant Recipients with HBsAg–, anti-HBc+ Donors (Non-liver)

<table>
<thead>
<tr>
<th>Recipient Status</th>
<th>Prophylaxis?</th>
<th>Duration</th>
<th>Monitoring (HBsAg, HBV DNA, ALT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>anti-HBc–anti-HBs–</td>
<td>Kidney: yes¹</td>
<td>At least 1 year¹</td>
<td>q3mo until 1 yr after d/c antivirals</td>
</tr>
<tr>
<td>Heart or lung: no</td>
<td>n/a</td>
<td>q3mo x 1 yr</td>
<td></td>
</tr>
<tr>
<td>anti-HBc–anti-HBs+</td>
<td>No</td>
<td>n/a</td>
<td>q3mo x 1 yr (also check for loss of anti-HBs)</td>
</tr>
</tbody>
</table>

¹Only kidney and liver recipients have been shown to reactivate in this situation. Ultimate duration of ppx depends on results of monitoring labs and patient's net state of immunosuppression.

Note: Pediatric organ transplantation from anti-HBc+ donors is NOT currently recommended due to lack of data for safety in children; if transplantation from an anti-HBc+ donor is being considered under exceptional circumstances, consult with Pediatric ID.

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### References/Guidelines:
- Te and Doucette, Viral Hepatitis Guidelines by the AST ID Community of Practice, Clinical Transplantation 2019, e13514.