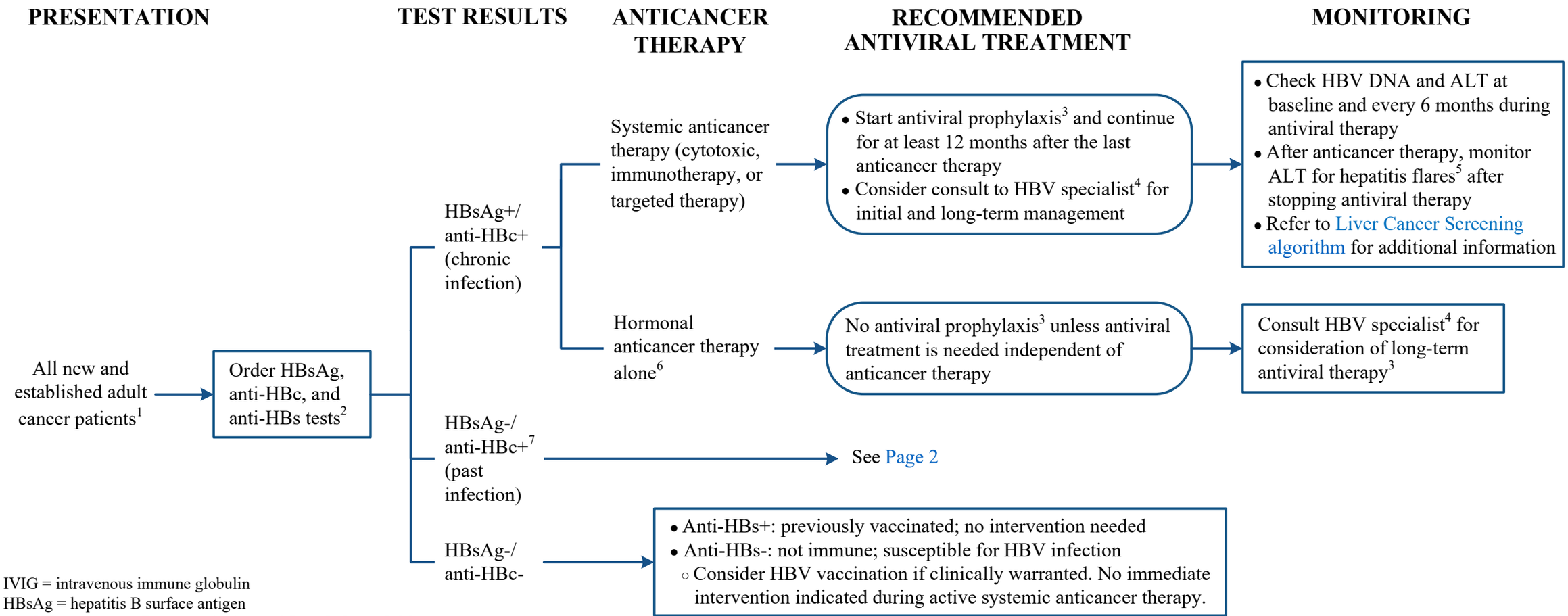
Hepatitis B Virus (HBV) Screening and Management

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.*



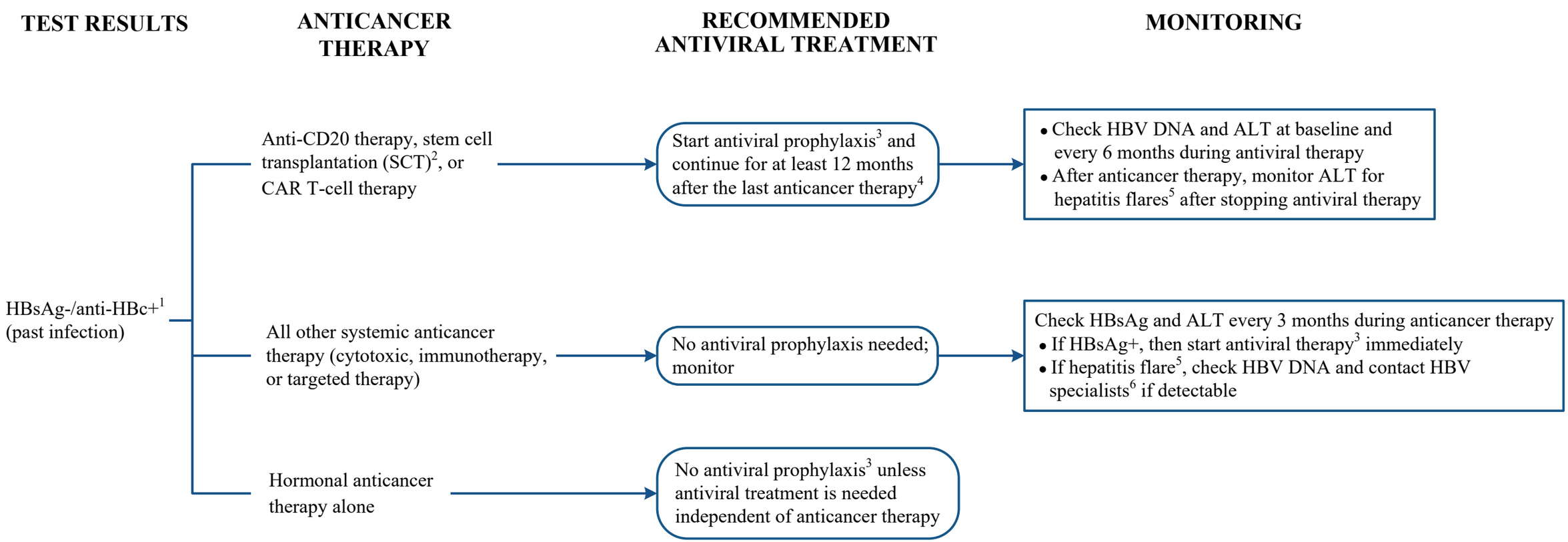
IVIG = intravenous immune globulin
HBsAg = hepatitis B surface antigen
anti-HBc = hepatitis B core antibody (total Ig or IgG, not IgM)
anti-HBs = hepatitis B surface antibody

[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

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.*



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

[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

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

APPENDIX A: Antiviral Therapy[1]

Recommended anti-HBV medications (to be used as monotherapy)[2]:

- 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-managment 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

Cao, W., Wei, J., Wang, N., Xu, H., Xiao, M., Huang, L., … Huang, L. (2020). Entecavir prophylaxis for hepatitis B virus reactivation in patients with CAR T-cell therapy. *Blood, The Journal of the American Society of Hematology, 136*(4), 516-519. doi:10.1182/blood.2020004907

Conners, E. E., Panagiotakopoulos, L., Hofmeister, M. G., Spradling, P. R., Hagan, L. M., Harris, A. M., … Nelson, N. P. (2023). Screening and testing for hepatitis B virus infection: CDC recommendations - United States, 2023. *Morbidity and Mortality Weekly Report (MMWR), 72*(1), 1-25. Retrieved from: https://www.cdc.gov/mmwr/volumes/72/rr rr7201a1.htm?s_cid=rr7201a1_w

Fu, S., Zhang, Q., Jing, R., Zu, C., Ni, F., Lv, Y., … Huang, H. (2023). HBV reactivation in patients with chronic or resolved HBV infection following BCMA-targeted CAR-T cell therapy. *Bone Marrow Transplantation, 58*(6), 701-709. doi:10.1038/s41409-023-01960-2

Hwang, J. P. Feld, J. J. Hammond, S. P., Wang, S. H., Alston-Johnson, D. E., Cryer, D. R. … Artz, A. S. (2020). Hepatitis B Virus Screening and Management for Patients with Cancer Prior to Therapy: ASCO Provisional Clinical Opinion Update. *Journal of Clinical Oncology, 38*(31):3698-3715. doi:10.1200/JCO.20.01757

LeFevre, M. L. on behalf of the U.S. Preventive Services Task Force (2014). Screening for hepatitis B virus infection in nonpregnant adolescents and adults: U.S. Preventive Services Task Force Recommendation Statement. *Annals of Internal Medicine*, *161*(1), 58-66. doi:10.7326/M14-1018

Liver Cancer Screening algorithm. https://www.mdanderson.org/content/dam/mdanderson/documents/for-physicians/algorithms/screening/screening-liver-web-algorithm.pdf

Reddy, K. R., Beavers, K. L., Hammond, S. P., Lim, J. K., & Falck-Ytter, Y. T. (2015). American Gastroenterological Association Institute guideline on the prevention and treatment of hepatitis B virus reactivation during immunosuppressive drug therapy. *Gastroenterology*, *148*(1), 215-219. doi:10.1053/j.gastro.2014.10.039

Terrault, N. A., Lok, A. S., McMahon, B. J., Chang, K. M., Hwang, J. P., Jonas, M. M., … Wong, J. B. (2018). Update on prevention, diagnosis, and treatment of chronic hepatitis B: AASLD 2018 hepatitis B guidance. *Hepatology*, *67*(4), 1560-1599. doi:10.1002/hep.29800

Tomblyn, M., Chiller, T., Einsele, H., Gress, R., Sepkowitz, K., Storek, J., … Boeckh, M. J. (2009). Guidelines for preventing infectious complications among hematopoietic cell transplant recipients: A global perspective. *Bone Marrow Transplantation, 44*(8), 453-455. doi:10.1016/j.bbmt.2009.06.019

DEVELOPMENT CREDITS

This practice consensus statement is based on majority opinion of Hepatitis B Virus experts at the University of Texas MD Anderson Cancer Center for the patient population. These experts included:

Core Development Team Leads

Jessica P. Hwang, MD, MPH (General Internal Medicine)
Harrys A. Torres, MD (Infectious Diseases)
Lan Wang, MD (Gastroenterology Hepatology & Nutrition)

Workgroup Members

Therese Bevers, MD (Cancer Prevention)
Mariela Blum Murphy, MD (GI Medical Oncology)
Celyne Bueno Hume, MD (General Medical Oncology)
Katie Delucia, PA-C (Physician Assistant Programs)
Alessandra Ferrajoli, MD (Leukemia)
Olga N. Fleckenstein, BS♦
Isabella Glitza Oliva, MD (Melanoma Medical Oncology)
Ahmed Kaseb, MD (GI Medical Oncology)
Craig Kovitz, MD (General Medical Oncology)
Ashley Martinez, DNP, APRN (Nursing, Advanced Practice)
Ethan Miller, MD (Gastroenterology Hepatology & Nutrition)
Amy Pai, PharmD♦
David Ramirez, MD (Breast Medical Oncology)
Ravin Ratan, MD (Sarcoma Medical Oncology)
Sheeba K. Thomas, MD (Lymphoma-Myeloma)
Sudhakar Tummala, MD (Neuro-Oncology)

♦ Clinical Effectiveness Development Team