

ACUTE HEPATITIS B INFECTION IN A HEMODIALYSIS
PATIENT DESPITE PERSISTENT NATURAL IMMUNITY
Jennifer Ennis and Nicole Stankus, University of Chicago Medical
Center, Chicago, IL, USA

Viral hepatitis remains a distinct clinical problem in dialysis patients. Little is known about the immunity of patients who have cleared a hepatitis B (HBV) viral infection and maintain protective titers of hepatitis B surface antibody (HBsAb). However, it is generally assumed that such immunity is life-long. We describe a first case of a new onset hepatitis B surface antigenemia in a chronic hemodialysis patient with natural immunity to HBV despite persistently “protective” HBsAb levels.

A 69-year-old female developed renal failure due to bilateral hydronephrosis caused by retroperitoneal lymphoma and was initiated on chronic hemodialysis. The patient had a negative hepatitis B surface antigen (HBsAg) and a positive HBsAb titer (≥ 10 mIU/mL). Her antibodies were thought to be due to natural immunity from a prior HBV infection, as she did not have a history of or indications for HBV vaccination. Five months later, the patient was admitted to the hospital and simultaneously tested positive for both HBsAg and HBsAb. HBV DNA levels were positive at 21 IU/mL. After a few months, the patient spontaneously cleared the HBsAg and HBV DNA levels again became undetectable. She maintained therapeutic HBsAb titers throughout this episode.

Immune response to HBV is complex and poorly understood. This case suggests that not all antibodies to HBsAg are immuno-protective against subsequent HBV infections. HBV vaccine escape mutants have been well described but are uncommon in the US. Widespread use of antiviral agents in the treatment of HBV may induce new genotype mutations. Patients newly exposed to such mutant viruses may no longer be protected by naturally acquired “traditional” antibodies. We were unable to characterize this patient’s HBV genotype because the viral load was too low. This phenomenon may be more likely to occur in dialysis patients who are further immunosuppressed from malignancy or other conditions. Such patients may require monthly surveillance with HbsAg despite having adequate HbsAb titers in order to minimize the risk of HBV transmission in hemodialysis units.