Occult Hepatitis B in Hemodialysis Units: The Urgent Need to Update Clinical Practice Guidelines

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Over recent decades, progressive implementation of serological testing, enhanced vaccination, use of individual protection measures, and cohort isolation of HBsAg-positive patients in hemodialysis units, successfully reduced hepatitis B transmission among patients and between patients and staff. This multifactorial approach established a protective framework that enhanced safety across dialysis units.

Current recommendations mandate the identification of all HBV-exposed patients through periodic testing for HBsAg, anti-HBc and anti-HBs.

Assigning HBsAg+ patients to isolation units with dedicated equipment and staff is an evidence-based recommendation that reflects current scientific consensus.

However, the nephrology community is now facing a previously unrecognized problem: occult hepatitis B infection (OBI), defined as detectable serum HBV-DNA in HBsAg-negative patients. OBI presents with low viremia, generally <200 IU/mL.[1,2] The different serological patterns against HBV or the detection of HBV DNA in HBsAg-negative patients raise questions regarding the appropriate management of these patients in hemodialysis units.[1] It has been assumed that patients with previous contact with hepatitis B, showing seroconversion with negative HBsAg, anti-HBs titers >10 IU/L, and negative anti-HBc IgM, correspond to past infections. However, any patient who has had prior exposure to HBV remains susceptible to viral reactivation under certain conditions of immunosuppression, since the viral genome persists within the nuclei of infected hepatocytes.[2] The significant improvement in the sensitivity of assays for HBV DNA detection has led to the identification of increasingly lower levels of viremia, down to 10–20 IU/mL of viral DNA.[2] These small, often transient, detections of viremia raise important questions regarding the appropriate management of patients undergoing hemodialysis, and have been detected even in patients with Anti-HBs > 10 IU/L.[3] According to the Portuguese Guidelines for patients undergoing hemodialysis, a patient is considered protected when anti-HBs titers are above 10 IU/L.[4] However, other societies are adopting more stringent standards. UK guidelines recommend that only anti-HBs concentrations above 100 IU/L are considered optimal for clinical protection.[5] Hepatitis B vaccination is a highly effective strategy against infection and has been included in the Portuguese National Immunization Program since 1994. However, a significant segment of the population remains non-immunized and Portugal faces migratory flows originating in countries where hepatitis B vaccination is either not available or not universally implemented.

Additionally, it is well established that patients with chronic kidney disease demonstrate suboptimal immunological responses even to high-dose vaccination regimens, underscoring the need for new vaccine formulations or alternative vaccination regimens that can provide more effective and long-lasting immunity for this high-risk group.[5]

It therefore becomes imperative to review our national best-practice recommendations regarding the periodic serological assessment of patients with prior exposure to hepatitis B, the definition of occult HBV infection (OBI), the determination of clinically relevant levels of viremia, the management of OBI cases, and the identification of conditions that may promote OBI reactivation.

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