HBV reactivation in a patient on chronic haemodialysis treatment

Gioacchino Li Cavoli · Natalia Li Destri ·
Tancredi Vincenzo Li Cavoli · Mattia Palmeri ·
Franca Servillo · Ugo Rotolo

Received: 21 November 2014 / Accepted: 7 January 2015 / Published online: 13 January 2015
© Japanese Society of Nephrology 2015

Keywords HBV infection · Hemodialysis treatment · Immune system dysfunction

To Editor

The subjects with chronic kidney disease show an immune system dysfunction, related to both uremic toxins and hemodialysis treatment (HD), and an increase of the susceptibility to infection [1]. The patients undergoing HD are at high risk for blood-borne pathogens infection due to the vascular access for HD process. The frequent hospitalizations increase the exposition to nosocomial infections. Despite the current low incidence of HBV infection among HD patients, outbreaks continue to occur. Our experience: the serologic HBV status of a 69-year-old male outpatient, HCV- and HIV-negative, undergoing on chronic HD, was “HBcAb alone” from the beginning of HD (January 2011, HBV-DNA negative) until September 2013 (Table 1). No recent history of transfusions and surgery was found; liver function tests resulted always negative. In December 2013, he had a flu-like syndrome. In January 2014, a routine HbsAg test was positive. We detected positivity for HBeAg and HBV-DNA with subsequent antibody response (HBsAb and HBeAb positivity) and IgM-HBcAb test negative. In July 2014, these alterations disappeared. Analysing the IgG-HBcAb sample/cut off trend, first we

observed a reduction, then a relevant increase. In the period of observation, the patient suffered from asthenia and anaemia. We did not detect any immunodeficiency. A transient immunosuppression (highlighted by a reduction in HBcAb sample/cut off) could have allowed the HBV reactivation in this patient with occult HBV infection. In the general population, HBV can reactivate after immune suppression. HBV recurrence is most frequently observed in patients infected with HIV, organ transplant recipients, with autoimmune diseases, solid tumours and lymphoma as well as in patients undergoing stem cell and bone marrow transplantation [2]. HBV and HCV infections are still widespread in HD centres. The incidence of HBV infection among HD patients is 0–7 % in developed countries and 10–20 % in developing ones. The prevalence of occult HBV infection in HD patients is 0–58 % [3]. The clinical course and presentation of patients on HD are distinguished from non-HD patients [4]. The acute HBV infection in HD patients produces frequently a mild or asymptomatic disease, and between 30 and 72 % of these patients might become chronic carriers due to impaired viral clearance [5]. The exact impact of HBV infection on the clinical outcomes of infected dialysis patients remains controversial. The interaction between uremia-associated immune dysfunction and the hepatotropic viruses has special aspects that need further investigations.

Conflict of interest The authors have declared that no conflict of interest exists.

References

1. Vacher-Coponat H, Brunet C, Lyonnet L, Bonnet E, Loundou A, Sampol J, et al. Natural killer cell alterations correlate with loss of renal function and dialysis duration in uraemic patients. *Nephrol Dial Transplant*. 2008;23:1406–14.

G. Li Cavoli (✉) · T. V. Li Cavoli · M. Palmeri · F. Servillo ·
U. Rotolo
Nephrology and Dialysis, Civic and Di Cristina Hospital,
via Francesco Cilea 43, 90144 Palermo, Italy
e-mail: giacchinolicavoli@libero.it

N. Li Destri
Microbiology and Virology, Civic and Di Cristina Hospital,
Palermo, Italy

Table 1 The serologic HBV status from January 2011 to August 2014

Test	Jan 2011	Mar 2013	Sep 2013	Jan 2014	Feb 2014	Mar 2014	May 2014	Jun 2014	Jul 2014	Aug 2014
HBsAg	Neg.	Neg.	Neg.	Pos.	Pos.	Pos.	Neg.	Neg.	Neg.	Neg.
HBsAb	Neg.	Neg.	Neg.	Neg.	Pos.	Pos.	Pos.	Pos.	Neg.	Neg.
HBcIgG	Pos 1.68 ^a	Pos. 1.30 ^a	Pos. 1.23 ^a	Neg. 0.98 ^a	Neg. 0.92 ^a	Neg. 0.92 ^a	Pos. 8.62 ^a	Pos. 8.83 ^a	Pos. 11.63 ^a	Pos. 10.73 ^a
HbcIgM	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
HbeAg	Neg.	Neg.	Neg.	Neg.	Pos.	Pos.	Neg.	Neg.	Neg.	Neg.
HbeAb	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Pos.	Pos.	Neg.	Neg.
HBV-DNA	Neg.	–	–	–	–	Pos. 1800 ^b	Neg.	Neg.	Neg.	Neg.
AST/ALT	18/24 ^a	10/13 ^a	8/12 ^a	9/14 ^a	6/8 ^a	9/11 ^a	12/11 ^a	13/15 ^a	9/12 ^a	10/14 ^a

^a sample/cut off^b UI/ml

2. Hoofnagle JH. Reactivation of hepatitis B. *Hepatology*. 2009;49:S156–65.
3. Goral V, Ozkul H, Tekes S, Sit D, Kadiroglu AK. Prevalence of occult HBV infection in haemodialysis patients with chronic HCV. *World J Gastroenterol*. 2006;7(12):3420–4.
4. Wong PN, Fung TT, Mak SK, Lo KY, Tong GM, Wong Y, et al. Hepatitis B virus infection in dialysis patients. *J Gastroenterol Hepatol*. 2005;20:1641–51.
5. Johnson DW, Dent H, Yao Q, Tranaeus A, Huang CC, Han DS, et al. Frequencies of hepatitis B and C infections among haemodialysis and peritoneal dialysis patients in Asia-Pacific countries: analysis of registry data. *Nephrol Dial Transplant*. 2009;24:1598–603.