

Association of Plasma Levels of Vitamin D With Chronic Hepatitis B Infection

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Dear Editor,

Vitamin D has been identified as an immune-modulator due to its immunomodulatory effects on cells of the immune system during the last decade. Research on vitamin D level in patients with HBV is a relatively new subject, which has been investigated in many studies. As the first step, the beneficial role of vitamin D in patients with HBV was suggested by Luong and Nguyen in 2012 (1). In the following year, Mahamid et al. (2) concluded that normal serum vitamin D levels are associated with spontaneous clearance of HBsAg in chronic inactive HBV patients. In the same year, the levels of vitamin D in chronic hepatitis B (CHB) patients compared with naturally immunized individuals and control individuals, which resulted in lower vitamin D levels in CHB patients (3). In another attempt, association of vitamin D level with HBV replication was analyzed in CHB patients and only 19% of CHB patients had adequate vitamin D serum levels. However, 81% of them had severe vitamin D deficiency or vitamin D insufficiency. Lower serum 25-OH vitamin D3 levels in patients with hepatitis B and C were shown to influence mortality risk in hepatitis virus (4). This deficiency of vitamin D was confirmed among patients with CHB in another study (5). Recently, the levels of vitamin D amongst 128 naive CHB patients, including those with positive and negative hepatitis B virus e antigen (HBeAg) were analyzed (6). In general, 25-OH vitamin D3 in CHB patients was significantly lower than control group. This deficiency was more intensive in patients with positive HBeAg than negative HBeAg. Lower levels of vitamin have been reported in patients with HBeAg in many investigations (7). Additionally, younger aged and normal alanine transaminase (ALT) were associated with relatively low and relatively high levels of vitamin D, respectively.

Almost all studies reported low levels of vitamin D amongst chronically infected patients. Additionally, lower vitamin D levels in negative HBeAg compared with

positive HBeAg patients was reported in two studies. Although, these studies are limited, it can be found that patients with CHB may have decreased levels of vitamin D. In all reviewed studies, vitamin D levels were measured in chronically infected patients. However, for identification of vitamin D deficiency or insufficiency, as the biomarker of CHB or other outcomes of HBV infection, new designed studies may be required. Considering all these evidences, further studies are needed to understand the real association of vitamin D levels and HBV associated factors.

Footnote

Authors' Contribution: Study concept and design: Soheil Tavakolpour, Shahnaz Sali; acquisition of data: Soheil Tavakolpour, and Shahnaz Sali; analysis and interpretation of data: Soheil Tavakolpour, and Shahnaz Sali; drafting of the manuscript: Soheil Tavakolpour, Shahnaz Sali, and Latif Gachkar; critical revision of the manuscript for important intellectual content: Soheil Tavakolpour, Shahnaz Sali, and Latif Gachkar; study supervision: Soheil Tavakolpour, and Shahnaz Sali.

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