

Why are T cells tolerant to hepatitis B virus?

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The level of PD-1 expression has been proved by recent studies to be positively correlated with the extent of HBV-specific T cell impairments. However, the degree of T cell exhaustion which affects the disease statuses of hepatitis B patients has so far been only evaluated in restricted and small groups of patients between those with established chronicity and subjects with acute HBV infection. Besides, whether levels of PD-1 expression on T cells differ between acute exacerbation of hepatitis B and chronic HBV infected patients is still unknown.

A research article to be published on July 28, 2008 in the *World Journal of Gastroenterology* addresses this question. The research team led by Shu-Ling Zhang from Tongji Medical College of Huazhong University of Science and Technology in China examined the expression of PD-1 on antigen specific CD8+ T cells in peripheral blood of chronic hepatitis B (CHB) and acute exacerbation of hepatitis B (AEHB) patients.

They found that the levels of PD-1 on total CD8+ T cells in CHB patients were significantly higher than those in AEHB patients and healthy individuals. Conversely, lower frequencies of HBV-specific CD8+ T cells were detected in samples from chronic patients compared to AEHB patients. Our results confirmed reports that HBV specific CD8+ T-cell responses in peripheral blood were intensified in samples from AEHB patients than in those from patients with chronic hepatitis who remains viral persistence.

Besides, there was a significant positive correlation between HBV viral load and percentage of PD-1 expression on CD8+ T cells in CHB and

AEHB group of subjects. However, PD-1 expression was not in association with disease flare-ups indicator alanine aminotransferase (ALT). This study clarified the correlation between PD-1 expression and two different HBV infection statuses.

Source: World Journal of Gastroenterology

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