

A Potential Antiviral Role for CCR5+CD8+ T Cells in Children with Hepatitis B

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Abstract

Background: While dysfunctional exhausted CD8+ T cells hamper viral control when children acquire hepatitis B virus (HBV) infection, it's crucial to recognize that CD8+ T cells have diverse phenotypes and functions. This study explored a subset of CD8+ T cells expressing C - C chemokine receptor type 5 (CCR5) in children with HBV infection. **Methods:** 36 patients in the immune tolerant (IT) group, 33 patients in the immune active (IA) group, and 55 patients in the combined response (CR) group were enrolled. The frequency, functional molecules and effector functions of the CCR5+CD8+ T cells population in different groups were evaluated. **Results:** The frequency of CCR5+CD8+ T cells correlated positively with the frequency of CCR5+ CD4+ T cells and patient age, and it correlated negatively with ALT, AST, HBV DNA, HBsAg and lactic dehydrogenase levels. CCR5+CD8+ T cells had higher levels of inhibitory and activated receptors and produced higher levels of IFN- γ , IL-2, and TNF- α than CCR5-CD8+ T cells. **Conclusion:** CCR5+CD8+T cells were partially exhausted but possessed a stronger antiviral activity than CCR5-CD8+T cells. The identification of this subset increases our understanding of CD8+ T cell functions and serve as a potential immunotherapeutic target for children with HBV infection.

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