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Down‐regulation of CD73 on B cells of patients with viremic HIV correlates with B cell activation and disease progression

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Abstract

Recently, alterations of the T cell expression of the ectonucleotidases, CD39 and CD73, during HIV infection have been described. Here, peripheral (n = 70) and lymph nodal B cells (n = 10) of patients with HIV at different stages of disease as well as uninfected individuals were analyzed via multicolor flow cytometry with regard to expression of CD39 and CD73 and differentiation, proliferation, and exhaustion status. Patients with chronic, untreated HIV showed a significantly decreased frequency of CD73‐expressing B cells ($P < 0.001$) compared with healthy controls. Decreased frequencies of $CD39^+CD73^+$ B cells in patients with HIV correlated with low $CD4^+$ counts ($P < 0.0256$) as well as increased proliferation and exhaustion status as determined by Ki‐67 and programmed death‐1 expression. Down‐regulation of CD73 was observed in naive and memory B cells as determined by CD27 and CD21. Neither HIV elite controller patients nor antiretroviral therapy–treated patients had significantly lower CD39 and CD73 expression on B cells compared with healthy controls. Of importance, low $CD73^+$ expression on B cells was associated with modulated in vitro B cell function. Further in vivo studies are warranted to evaluate the in vivo role of phenotypic loss of CD73 in B cell dysregulation in HIV.

Citing Literature

Supporting Information