Persistently Activated CD27⁺CD80⁺ B Cells Following Antiretroviral Therapy (ART) Correlate With Macrophage Activation

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ABSTRACT

INTRODUCTION

Although antiretroviral therapy (ART) greatly improves the prognosis of HIV-infected individuals, control of viral replication still falls to completely restore immune function. There is evidence that defective B cell responses remain following ART, including hypergammaglobulinemia and dysregulation of some subsets (Mallal et al. 2015). In HIV infection, there is also a massive loss of T cells in mucosal tissues, including GI tract or Peyers’ patches in the gut. This immune depletion leads to a breach in the first line of defense in many mucosally exposed tissues such as the gut. This breach in the mucosal barriers can lead to inflammation. These products can activate immune cell receptors including TLRs on macrophages, causing systemic inflammation. Numerous soluble factors can be measured in plasma as indicators of macrophage activation (CD25, CD14), lymphocyte activation (CD27, IFNγ, IL-2) and even vascular inflammation (smooth muscle actin, SMC). The goal of our study is to clarify whether the ongoing systemic inflammation in HIV contributes to B cell abnormalities.

RESULTS

Figure 2A shows a representative flow cytometry chart of B cells following ART from a single subject. A significant increase in resting memory B cells was observed following 24 weeks of ART, a trend that remained throughout 48 weeks of ART. This increase was not observed in non-infected controls at any point in time.

REFERENCES


CONCLUSIONS

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