Retrovirology

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Oral presentation

HIV Replication, Immune Activation, and CD4 Depletion: What the Virus Spares is as Significant as What It Destroys

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Early depletion of mucosal CD4 T cells does not appear to substantially compromise the regenerative capacity of the immune system. Analysis of in-vivo DNA labeling suggests that in the chronic phase, activated T cells mainly arise in local proliferation bursts that resemble antigen-driven responses. Most viral replication likely occurs in such bursts. Indirect evidence suggests that cytopathic effects of the virus in this context are selective and that memory cell regeneration is spared.

This and other observations question the validity of proposed mechanisms that directly link disease progression during the chronic phase to early mucosal depletion. I suggest that, paradoxically, both this early depletion and activation-induced lymphocyte turnover, while contributing to the pathogenic process in the long run, may also serve to control the rates of viral replication and evolution.