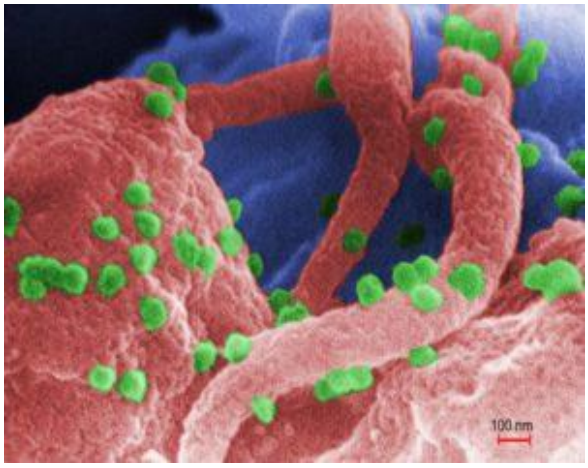
# ICI 2016 – What leads to HIV progression in children?




Human Immunodeficiency Virus (Public Health Image Library, NIAID, Image ID:11279)

Dendritic cells play an important role in B-cell activation through the B lymphocyte stimulator (BLyS). Since B cell activation and exhaustion are characteristic of HIV infection, researchers at the India Institute of Medical Sciences investigated the role of dendritic cells in B cell activation; focusing on children who were either LTNP (long term nonprogressor) or progressors.

LTNP are HIV-infected individuals who are maintain high CD4 and CD8 counts and low viral loads in the absence of antiretroviral treatment (ART). Approximately, only 5% of HIV-positive individuals are LTNP and some of these individuals

can remain without ART for even 30 years. It is still not fully understood why some people are LTNP while other progress rapidly to AIDS. Some of the factors that determine how an individual responds to HIV infection include genetic and host factors such as HLA and immune response genes. Characteristics of the infecting virus may also determine whether someone will be a progressor or LTNP.

Presenting their findings at the International Congress of Immunology (ICI) 2016, the researchers explained that they recruited a cohort of 17 children who were HIV-positive but ART-naïve. They were categorized as either LTNPs or progressors, depending on their CD4 counts at the time of recruitment. The median CD4 count for the LTNPs was 979 and the progressors was 397. The progressors had significantly lower myeloid and plasmacytoid dendritic cells as opposed to the LTNPs. LTNPs had lower BLyS expression on the surface of both myeloid and plasmacytoid dendritic cells. LTNPs also had significantly higher percentages of memory and naïve B cells as opposed to progressors.

In summary, progressors had lower percentages of the different dendritic cell subsets and had increased expression of the BLyS. These data suggest that dendritic cells may have modulatory effects on B cells which may affect the rate of HIV disease progression. Understanding the factors that drive HIV progression and control is important in HIV treatment research.

More information on the conference – International Congress of Immunology 2016

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