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Monitoring the latent HIV reservoir and immune recovery in patients on therapy

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One person out of 30 million has had a sterilizing cure of HIV. While this cure came through a risky stem cell transplant, it demonstrates that cure of HIV is possible. There is general agreement that latently infected CD4 memory T cells are now the major barrier to a cure, but no agreement on how to measure this “reservoir”? Furthermore, the compartment that is easiest to serially sample (blood) likely only contains less than 10% of the reservoir, since most of the reservoir is dispersed in different lymph nodes. Our goal is to correlate blood reservoir measurements with a clinical marker (CD4:CD8 ratio) that is already correlated with immune health and risk of death. We have decreased the time to answer and improved the automation of two types of reservoir measurements, TILDA (Tat/rev Induced Limiting Dilution Assay) and Quantitative Viral Outgrowth Assay (QVOA). The TILDA assay, we have improved the signal: noise by adding a patented sample prep step developed by Salus Discovery. We have quantified ~300 CD4:CD8 ratio responses over decades and are testing the hypothesis that there will be a correlation between reservoir size in the peripheral blood and ratio responsiveness. Rigorous analysis will be needed to determine how the easily available CD4:CD8 ratio?, may (or may not) be related to the circulating reservoir, but circumstantial evidence already exists and will be discussed.

Biography

Rob Striker has completed his MD/PhD from Washington University in St. Louis and was an Infectious Disease and Howard Hughes Medical Institute Postdoctoral Fellow at Stanford University School of Medicine. He, now sees patients for the Veterans Association, the University of Wisconsin, and AIDS Resource Center of Wisconsin. He has published more than 45 papers and runs a research lab working to improve how antivirals are developed and prescribed?

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