The effect of structured treatment interruption on the cellular non-cytopathic antiviral response in patients with primary HIV infection

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Rationale: The CD8+ cellular non-cytotoxic antiviral response (CNAR) plays an important role in controlling HIV replication during early infection. CNAR activity is decreased in patients receiving antiviral drug therapy. Treatment stoppage or structured treatment interruption (STI) has been reported to have beneficial autovaccination-like properties that enhance immune function.

Methods: To assess the effect of STI on CNAR in patients with primary HIV infection, we followed five subjects enrolled in the San Francisco Options Study for 24 weeks following the initiation of treatment interruption. CNAR was measured as the relative ability of CD8+ T-cells to suppress replication in HIV-1 infected non-autologous CD4+ cells.

Results: Consistently, following treatment interruption, viral breakthrough occurred, peak replication was seen at 28 days, and sharply declined by 6 weeks, establishing a “set point”. In each patient, a significant increase in CNAR was observed at the end of follow-up.

Conclusion: These preliminary findings suggest that STI may beneficially allow CNAR to rebound, perhaps enhancing activity, and that CNAR may play an important role in controlling HIV replication following treatment interruption during primary infection.