

## ORAL ABSTRACTS

**641. Acute Retroviral Syndrome is Associated with Gut Mucosal CD4 Depletion, Inflammation and High Viral and Proviral Burden in Systemic and Tissue Compartments**

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**Background.** Most acute HIV infection (AHI) patients suffer acute retroviral syndrome (ARS), but information on virologic and immunologic correlates of ARS is limited.

**Methods.** Subjects were prospectively enrolled during AHI (Fiebig stages I-V) from May 2009 to February 2014 in Bangkok, Thailand. Study physicians completed a standardized checklist for each subject and those with  $\geq 3$  qualifying symptoms were considered to have ARS. Colon tissue (n = 42) and cerebrospinal fluid (CSF) (n = 37) were collected on willing volunteers. HIV burden and biomarkers were compared between those with and without ARS using the Mann-Whitney U test.

**Results.** Of 97,920 persons screened for HIV infection, 150 were enrolled during AHI at a mean of 18.5 days since history of HIV exposure. Median age was 28 years and 141 (94%) subjects were men. ARS was observed in 114 (76%). The most common symptoms were fever (94%), fatigue (81%), headache (72%), pharyngitis (60%), and myalgia (60%).

In blood, subjects with ARS had higher HIV RNA (median 5.7 vs. 4.6 log<sub>10</sub> copies/mL, p < 0.001); total HIV DNA (134.1 vs. 7.5 copies/10<sup>6</sup> PBMCs, p = 0.02); C-reactive protein (1431 vs. 644 µg/mL, p = 0.004); tissue necrosis factor-α (7.41 vs. 4.71 pg/mL, p = 0.001); and D-dimer (283 vs. 179 µg/mL, p = 0.007).

In colon, subjects with ARS had lower absolute numbers of CD4+ T cells (6.60 vs. 11.8 x 10<sup>6</sup> cells/gm, p = 0.02) and lower colonic HIV RNA (3.13 vs. 1.7 log<sub>10</sub> copies/gm, p = 0.009), while the frequency of activated CD8+ T cells (HLA-DR + /CD38+) was significantly increased (8.9% vs. 4.4%, p = 0.01), as compared to subjects without ARS. In the CSF, ARS was associated with higher HIV RNA (3.7 vs. 1.8 log<sub>10</sub> copies/mL, p = 0.006) and neopterin (2482 vs. 1101 pg/mL, p = 0.001). There were no correlations between these biomarkers and gastrointestinal or central nervous system symptoms.

**Conclusion.** Subjects with ARS had higher HIV RNA and proviral DNA in blood, colon and CSF. ARS was associated with depletion of CD4+ T cells and increased CD8 T cell activation in the sigmoid colon as well as heightened inflammation in the periphery. Patients with ARS may have poorer outcomes than those without ARS, particularly if they continue to display this unfavorable profile after treatment.

**Disclosures.** All authors: No reported disclosures.