1609 Plasma markers of immune activation likely reflect related but distinct processes of cellular immune activation in HIV-infected persons before and after suppression of viremia by antiretroviral therapy: ACTG 5260

The Harvard community has made this article openly available. Please share how this access benefits you. Your story matters

Citation

Published Version
doi:10.1093/ofid/ofu052.1155

Citable link
http://nrs.harvard.edu/urn-3:HUL.InstRepos:35982292

Terms of Use
This article was downloaded from Harvard University’s DASH repository, and is made available under the terms and conditions applicable to Other Posted Material, as set forth at http://
Plasma markers of immune activation likely reflect related but distinct processes of cellular immune activation in HIV-infected persons before and after suppression of viremia by antiretroviral therapy: ACTG 5260

Theodoros Kelesidis, MD, PhD1; Carlee Moser, PhD2; Grace A. McComsey, MD3,4; Todd Brown, MD, PhD5; Heather Ribaudo, PhD5; Thuy Tien T Tran2; Otto Yang MD1; James Stein, MD6; Judith Currier, MD, MSc7; 1David Geffen School of Medicine at University of California Los Angeles, Los Angeles, CA; 2Harvard School of Public Health, Boston, MA; 3Case Western Reserve University School of Medicine, Cleveland, OH; 4University Hospitals Case Medical Center, Cleveland, OH; 5Johns Hopkins University, Baltimore, MD; 6University of Wisconsin School of Medicine and Public Health, MADISON, WI; 7University of California Los Angeles, Los Angeles, CA

Session: 201. HIV 6: Basic Science
Saturday, October 11, 2014: 12:30 PM

Background. Cellular markers of immune activation are strong predictors of disease progression and comorbidities in HIV infection. It is unclear whether soluble biomarkers of T cell (sIL-2r) and monocyte (MNC) activation (sCD14, sCD163) represent robust surrogate markers of cellular immune activation during the course of antiretroviral therapy (ART).

Methods. In the ACTG A5260s study, Spearman correlations between biomarkers of T-cell and MNC activation and proinflammatory MNC (pMNCs) subsets were estimated at entry and 96 weeks in 328 HIV-infected treatment-naive subjects randomized equally to tenofovir/emtricitabine plus raltegravir or ritonavir-boosted atazanavir or darunavir. Analyses were restricted to 234 (71%) subjects who had HIV-1 RNA <50 copies/ml by week 24 and thereafter. Plasma and cellular immune markers were determined by ELISA and flow cytometry, respectively.

Results. sIL-2r and sCD163 were significantly associated with T cell activation (% CD38+DR+ CD8 T cells) at entry and 96 weeks. sCD163 was also associated with both T cell activation and pMNCs (% CD14 + CD16+ MNCs) after successful ART. sCD14 was significantly associated with T cell activation and pMNCs only at entry. After 96 weeks of ART, sIL-2r and sCD14 were not associated with cellular markers of pMNCs (table).

<table>
<thead>
<tr>
<th>Cellular Markers</th>
<th>sIL-2r</th>
<th>sCD14</th>
<th>sCD163</th>
<th>sIL-2r</th>
<th>sCD14</th>
<th>sCD163</th>
</tr>
</thead>
<tbody>
<tr>
<td>% CD38+DR+ CD8 T cells (T cell activation)</td>
<td>0.36 (0.001)</td>
<td>0.25 (0.001)</td>
<td>0.38 (0.001)</td>
<td>0.18 (0.011)</td>
<td>0.11 (0.11)</td>
<td>0.40 (0.001)</td>
</tr>
<tr>
<td>% CD14+CD16+ MNCs (pMNCs)</td>
<td>0.07 (0.32)</td>
<td>0.27 (0.06)</td>
<td>0.38 (0.38)</td>
<td>0.06 (0.06)</td>
<td>0.07 (0.32)</td>
<td>0.16 (0.22)</td>
</tr>
<tr>
<td>% CD163+ MNCs (pMNCs)</td>
<td>-0.01 (0.90)</td>
<td>0.03 (0.65)</td>
<td>-0.02 (0.78)</td>
<td>0.07 (0.07)</td>
<td>-0.02 (0.52)</td>
<td>-0.06 (0.52)</td>
</tr>
</tbody>
</table>

Conclusion. There were modest associations between all plasma markers of immune activation and cellular markers of T activation in viremic subjects. However, after successful ART, only sCD163 had a modest association with cellular markers of T cell activation. Plasma markers of immune activation may reflect different immune activation pathways with differential dependence on viral replication vs immune dysregulation that is not reversed with viral suppression by ART.

Disclosures. All authors: No reported disclosures.