Early and late alterations in B-cell subsets during acute HIV infection

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GAMA STUDY. Longitudinal study of the effects of primary HIV infection (PHI) in immune cells and inflammatory cytokines.
**OBJECTIVE**

Measure the changes induced by primary HIV infection (PHI) in the **B cell compartment** and how these changes impact chronic B cell dysregulation in HIV infected individuals.

**METHODOLOGY**

*Multi-color flow cytometry* B cells immunophenotyping.

<table>
<thead>
<tr>
<th>CD19 APC-R700</th>
<th>CD10 BV650</th>
<th>CD45RB PE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IgD PE-Cy7</td>
<td>CD21 PE-CF594</td>
<td>CD86 PerCP-Cy5.5</td>
</tr>
<tr>
<td>IgM FITC</td>
<td>CD27 BV510</td>
<td>CD279 (PD-1) BV421</td>
</tr>
<tr>
<td>IgA APC</td>
<td>CD38 BV786</td>
<td>Viability</td>
</tr>
</tbody>
</table>
Dynamics of B cells and main subsets during Acute HIV infection.
RESULTS

Dynamics of functional subsets of B cells during Acute HIV infection.

Transitional

Marginal Zone

GeSIDA 2019
RESULTS

Dynamics of functional subsets of B cells during Acute HIV infection.

Plasmablasts

Ig dynamics

Acute HIV infection
CONCLUSIONS

- **Alterations** in B cell subsets observed:
  - **Early alterations**
    - Naïve ↓
    - Activated Memory ↑
    - Tissue Like Memory ↑
  - **Late alterations**
    - Transitional ↑
    - Marginal zone ↓

- **B-cell activation** is readily observed in PHI consistent with the elicitation of a strong response against HIV.

- These data delineate **early changes** in B cells and confirm that early treatment would result in beneficial effects on the B-cell compartment.
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