IMMUNE RECONSTITUTION AND SKEWED RESPONSES AFTER ART START IN HIV INFECTED UGANDANS

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Background and aim

- HIV-induced inflammation drives CD4 T cell depletion and progression towards AIDS
- Reported associations but relationship between inflammation and infection not fully understood

**Goal: Study the HIV-induced inflammation in patients on cART**

<table>
<thead>
<tr>
<th>ART-naive</th>
<th>ART-naive</th>
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<tbody>
<tr>
<td>N</td>
<td>11</td>
</tr>
<tr>
<td>Age (Years)</td>
<td>36 [30-40]</td>
</tr>
<tr>
<td>Gender ratio (M/F)</td>
<td>4:7</td>
</tr>
<tr>
<td>PB CD4 count (Cells/μl)</td>
<td>333 [241-390]</td>
</tr>
<tr>
<td>Plasma virus load (Log HIV copies)</td>
<td>5.2 [5.1-5.3]</td>
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Leeansyah et al, Curr Opin HIV AIDS 2013
Inflammation after cART start

- Increased inflammation under cART despite full HIV suppression
  - 17 circulating biomarkers measured

- T cell immune profile suggests response to other pathogens
  - Phenotype CD4 and CD8 subsets
    - Th, memory, activated
  - Transcriptome sorted T cell subsets
Changes in microbiome after cART start

- Significant changes in circulating microbiome observed after cART start in all participants
- Noticeable increase in relative load of several pathogenic agents

![Circulating microbial load diagram](image_url)
Association microbiome and inflammation

- Increased inflammation correlates with higher microbial burden.
- Inflammation level inversely correlates with GBV-C frequencies.

**Conclusion and outlook**

*Following cART initiation, changes in the circulating microbiome are associated with exacerbated inflammation.*

*Clinically silent immune activation could contribute to a sustained HIV reservoir and impact immunity to other infections and vaccines.*
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