Biological therapy increases NCR⁺ ILC3 levels in IBD patients

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Disclosure

• No disclosures
Introduction

- Innate lymphoid cells (ILCs) are mucosal resident cytokine producing cells
- Sense local environment
- Regulate homeostasis and defence
- High plasticity

ILC3

NCR⁺: IL-17, IL-22

RORγt

Goldberg R, Nat Rev 2015
Introduction

- Innate lymphoid cells (ILCs) are mucosal resident cytokine producing cells
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Introduction

• ILCs are mucosal resident cytokine producing cells
• Sense local environment
• Regulate homeostasis and defence
• Biologicals:
  • Ustekinumab targets the p40 subunit of IL-12/-23
  • Anti-TNF
  • VDZ

Can biological treatment reverse ILC plasticity?
### Baseline patient characteristics and ILC levels

**Intestinal ILC1s**

<table>
<thead>
<tr>
<th></th>
<th>UST</th>
<th>Anti-TNF</th>
<th>VDZ</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number</strong></td>
<td>26</td>
<td>14</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td><strong>% CD</strong></td>
<td>100</td>
<td>100</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td><strong>Age (years)</strong></td>
<td>45  (28;51)</td>
<td>28(21;39)</td>
<td>43,5(27;50)</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Gender (M/F)</strong></td>
<td>7/9</td>
<td>6/8</td>
<td>6/8</td>
<td>0.96</td>
</tr>
<tr>
<td><strong>Disease duration (years)</strong></td>
<td>13.1(3;25)</td>
<td>3.3(0.4;4)</td>
<td>8.2 (2;23)</td>
<td>0.026</td>
</tr>
<tr>
<td><strong>Previous biologicals</strong></td>
<td>1 (1;3)</td>
<td>0 (0;0.5)</td>
<td>1(1;2)</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

Data depicted as Median (IQR)
Baseline patient characteristics and ILC levels

- NCR+ ILC3s observed in the circulation of 15% of CD patients.
Biological therapy can restore intestinal NCR⁺ ILC3 levels

Wilcoxon testing
*<0.05, ***<0.001
Peripheral ILCs are affected by UST and anti-TNF treatment

Wilcoxon testing
*<0.05, **<0.01
Conclusion

• First report of NCR⁺ ILC3s in CD patients
  • Increase during biological treatment

• Anti-TNF and Ustekinumab can decrease peripheral and intestinal ILC1 levels in favour of NCR⁺ ILC3

• No effect of Vedolizumab on peripheral ILC distribution
ARGID – IBD group

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