An Exploratory Analysis of the Potential Disconnect Between Objective Inflammatory Response and Clinical Response Following Certolizumab Pegol Treatment in Patients with Active Axial Spondyloarthritis

Objective
In this post-hoc analysis of the RAPID-axSpA study, 1 we evaluated the relationship between objective measures of inflammation, as measured by MRI/CRP, and clinical outcomes following 12 weeks of certolizumab pegol treatment in patients with active axial spondyloarthritis (axSpA).

Background
AxSpA clinical trials use validated composite outcome measures, such as ASAS-driven Disease Activity Score (ASDAS) and Bath Ankylosing Spondylitis Disease Activity Index (BADAS).

Methods
• We report post-CZP clinical measures of disease activity (ASDAS, BASDAI) and objective measures of inflammation (CRP, ASspiMRI-a concentration) in patients with pre-CZP inflammation, defined as either elevated MRI or CRP levels.
• We also report patient-level estimates, data from two independent readers were pooled.

Results
• Improvements in MRI/CRP inflammatory measures did not translate into similar improvements in clinical responses for most patients.
• However, only a minority of both r-axSpA (136 patients: r-axSpA: 76; nr-axSpA: 60) had a pre-CZP CRP (≥15 mg/L) – post-CZP outcomes stratified by ASAS40 response.

Conclusions
This analysis revealed a potential disconnect between objective measures of inflammation, as measured by MRI and CRP, and clinical outcomes. In most patients, CZP treatment resulted in a reduction of objective measures of inflammation, irrespective of improvements in clinical symptoms and measures of disease activity. The use of clinical response measures as clinical trial endpoints may therefore underestimate anti-inflammatory treatment effects.

Table 1
Baseline demographics and characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean (SD)</th>
<th>N=65</th>
<th>N=52</th>
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</thead>
<tbody>
<tr>
<td>Age, y</td>
<td>40.4 (11.4)</td>
<td>35.8 (10.9)</td>
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<tr>
<td>BMI, kg/m²</td>
<td>27.0 (5.2)</td>
<td>26.8 (6.0)</td>
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<tr>
<td>Male, n (%)</td>
<td>25 (32.9)</td>
<td>28 (46.7)</td>
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<tr>
<td>ASAS40 response criteria</td>
<td>0–&lt;50%</td>
<td>50–&lt;75%</td>
<td>≥75%</td>
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<tr>
<td>CRP (mg/L)</td>
<td>21.2 (27.5)</td>
<td>16.2 (17.0)</td>
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<tr>
<td>MRI SIJ score</td>
<td>50.7%</td>
<td>52.2%</td>
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