**ONLINE SUPPLEMENTARY MATERIAL**

**Supplementary Table S1.** AMBITION and ADACTA Study Designs

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| --- | --- | --- | --- | --- | --- |
| **Study** | **Description** | **Arms** | **Patient Population** | **Time** | **Primary Endpoint** |
| **AMBITION (ClinicalTrials.gov identifier NCT00109408)** | Phase 3, randomized, double-dummy, double-blind, parallel-arm, multicenter trial | TCZ IV monotherapy 8 mg/kg q4w (n = 288)MTX monotherapy7.5-20 mg/week(n = 284)PBO for 8 weeks then TCZ-IV monotherapy 8 mg/kg q4w for 16 weeks(n = 101) | Patients with moderate to severe active RA for whom previous treatment with MTX or biologics had not failed; 6 months MTX free | 24 weeks, double blind5-year OLE: after 24 weeks, patients received open-label TCZ IV ± MTX | ACR20 response at week 24 |
| **ADACTA (ClinicalTrials.gov identifier NCT01119859)** | Phase 4, randomized, double-blind, active-controlled, parallel-group, multicenter trial | TCZ IV 8 mg/k q4w monotherapy(n = 163)ADA SC 40 mg q2w monotherapy (n = 162) | Patients with severe active RA who were intolerant of MTX or for whom continued MTX treatment was inappropriate | 24 weeks, double blind | Change in DAS28 from baseline to week 24 |

ACR, American College of Rheumatology; ADA, adalimumab; DAS28, Disease Activity Score in 28 joints; IV, intravenous; MTX, methotrexate; OLE, open-label extension; PBO, placebo; q2w, every 2 weeks; q4w, every 4 weeks; RA, rheumatoid arthritis; SC, subcutaneous; TCZ, tocilizumab.

**Supplementary Table S2.** Proportion of Patients Reporting Improvement ≥ MCID\* in PROs at 24 Weeks and NNT of TCZ vs MTX (AMBITION) or ADA (ADACTA)

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|  | **AMBITION†** | **ADACTA†** |
|  | **Improvement****≥ MCID,****% of Patients** |  | **Improvement****≥ MCID,****% of Patients** |  |
|  | **TCZ** | **MTX** | **NNT** | **TCZ** | **ADA** | **NNT** |
| PtGA | 79.8 | 73.5 | 15.9 | 82.6 | 75.6 | 14.3 |
| Patient pain | 78.9 | 74.0 | 20.4 | 83.3‡ | 70.1 | 7.5 |
| HAQ-DI | 77.0§ | 67.8 | 11.0 | 71.3 | 64.8 | 15.4 |
| FACIT-Fatigue | 68.6‡ | 55.7 | 7.8 | 71.5 | 61.9 | 10.4 |
| SF-36 PCS | 77.4 | 77.6 | −426.9 | 75.4 | 70.8 | 21.7 |
| SF-36 MCS | 64.3 | 56.6 | 12.9 | 66.4§ | 50.8 | 6.4 |
| Physical functioning | 76.3 | 71.7 | 21.7 | 74.3 | 70.4 | 25.7 |
| Role-physical | 58.3‡ | 49.1 | 10.9 | 71.5 | 63.0 | 11.7 |
| Bodily pain | 84.0 | 81.8 | 46.9 | 79.6 | 74.3 | 18.9 |
| General health | 67.4 | 65.8 | 62.7 | 57.7 | 60.4 | −35.9 |
| Vitality | 78.9‡ | 72.1 | 14.5 | 78.8§ | 62.2 | 6.0 |
| Social functioning | 68.3 | 61.0 | 13.7 | 70.1 | 63.0 | 14.1 |
| Role-emotional | 45.0 | 39.4 | 17.8 | 58.1 | 53.3 | 21.0 |
| Mental health | 62.0 | 52.2 | 10.2 | 70.6 | 60.7 | 10.2 |

ADA, adalimumab; FACIT, Functional Assessment of Chronic Illness Therapy; HAQ-DI, Health Assessment Questionnaire Disability Index; MCID, minimum clinically important difference; MCS, mental component summary; MTX, methotrexate; NNT, number needed to treat; PCS, physical component summary; PRO, patient-reported outcome; PtGA, patient global assessment; RA, rheumatoid arthritis; SF-36, Short Form-36; TCZ, tocilizumab.

\*The MCID for PROs were defined as follows: HAQ-DI, ≥ 0.22; PtGA, ≥ 10; patient pain, ≥ 10; FACIT-Fatigue, ≥ 4; SF-36 PCS/MCS, ≥ 2.5; SF-36 domains, ≥ 5.0.

†Analyses were performed using the per-protocol population in the AMBITION (TCZ, n = 265; MTX, n = 259) and the intention-to-treat population in ADACTA (TCZ, n = 163; ADA, n = 162) and adjusted for site (AMBITION)/region (ADACTA), baseline score (ADACTA) and duration of RA.

‡ *P* < 0.05; § *P* < 0.01.