**SUPPLEMENT**

**Supplemental Table 1. Median and Mean CDAI Scores and Mean DAS28-ESR**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **n** | **Baseline** | **Week 12** | **Week 26** |
| **TCZ naïve** | **CDAI, median (IQR)** | 594 | 19.5 (12.4-27.4) | 8.0 (3.8-14.9) | 6.0 (2.4-14.0) |
| **CDAI, mean (SD)** | 21.1 (13.0) | 10.7 (10.1) | 9.7 (10.4) |
| **DAS28-ESR, mean (SD)** | 519 | 4.8 (1.3) | 2.8 (1.4) | 2.7 (1.4) |
| **TCZ-IV-SC** | **CDAI, median (IQR)** | 594 | 4.6 (1.5-9.7) | 4.6 (2.0-11.7) | 4.6 (1.9-10.2) |
| **CDAI, mean (SD)** | 7.3 (8.6) | 7.0 (7.1) | 6.8 (7.0) |
| **DAS28-ESR, mean (SD)** | 519 | 2.2 (1.3) | 2.2 (1.2) | 2.1 (1.2) |

CDAI, Clinical Disease Activity Index; DAS28-ESR, Disease Activity Score in 28 joints as measured by erythrocyte sedimentation rate; IQR, interquartile range; TCZ, tocilizumab; TCZ-IV-SC, patients who switched from intravenous to subcutaneous tocilizumab.

**Supplemental Table 2.** CDAI Remission by Baseline Characteristics

|  |  |  |  |
| --- | --- | --- | --- |
|  | **All Patients** | **TCZ Naïve** | **TCZ-IV-SC** |
| **Category** | **Total Patients** | **Achieved Remission, n (%)** | **Total Patients** | **Achieved Remission, n (%)** | ***P* value** | **Total Patients** | **Achieved Remission, n (%)** | ***P* value** |
| **Total patients** | 770 | 230 (29.8) | 594 | 163 (27.4) |  | 176 | 67 (38.0) |  |
| **Male** | 113 | 40 (35.3) | 92 | 32 (34.7) | NS0.0860 | 21 | 8 (38.0) | NS0.9978 |
| **Female** | 657 | 190 (28.9) | 502 | 131 (26.0) | 155 | 59 (38.0) |
| **Age, years** |
| **< 15** | 0 | 0 (0.0) | 0 | 0 (0.0) | NS0.5230 | 0 | 0 (0.0) | NS0.0523 |
| **≥ 15 to < 65** | 421 | 136 (32.3) | 319 | 91 (28.5) | 102 | 45 (44.1) |
| **≥ 65** | 349 | 94 (26.9) | 275 | 72 (26.1) | 74 | 22 (29.7) |
| **Body weight, kg** |
| **< 40** | 20 | 3 (15.0) | 18 | 3 (16.6) | NS0.5336 | 2 | 0 (0.0) | NS0.4903 |
| **≥ 40 to < 60** | 565 | 167 (29.5) | 433 | 117 (27.0) | 132 | 50 (37.8) |
| **≥ 60** | 168 | 54 (32.1) | 127 | 37 (29.1) | 41 | 17 (41.4) |
| **Unknown** | 17 | 6 (35.2) | 16 | 6 (37.5) |  | 1 | 0 (0.0) |  |
| **BMI, kg/m2** |
| **< 18.5** | 64 | 18 (28.1) | 49 | 13 (26.5) | NS0.8551 | 15 | 5 (33.3) | NS0.8806 |
| **≥ 18.5 to < 25** | 449 | 135 (30.0) | 338 | 90 (26.6) | 111 | 45 (40.5) |
| **≥ 25 to < 30** | 91 | 24 (26.3) | 67 | 16 (23.8) | 24 | 8 (33.3) |
| **≥ 30** | 15 | 3 (20.0) | 12 | 2 (16.6) | 3 | 1 (33.3) |
| **Unknown** | 151 | 50 (33.1) | 128 | 42 (32.8) |  | 23 | 8 (34.7) |  |
| **Disease duration, years** |
| **< 2** | 126 | 43 (34.1) | 118 | 41 (34.7) | NS0.0819 | 8 | 2 (25.0) | NS0.5644 |
| **≥ 2 to < 5** | 120 | 44 (36.6) | 95 | 32 (33.6) | 25 | 12 (48.0) |
| **≥ 5 to < 10** | 169 | 46 (27.2) | 124 | 29 (23.3) | 45 | 17 (37.7) |
| **≥ 10** | 258 | 70 (27.1) | 185 | 45 (24.3) | 73 | 25 (34.2) |
| **Unknown** | 97 | 27 (27.8) | 72 | 16 (22.2) |  | 25 | 11 (44.0) |  |
| **Disease stage classified by Steinbrocker** |
| **Stage I** | 133 | 59 (44.3) | 114 | 48 (42.1) | \*\*0.0012 | 19 | 11 (57.8) | NS0.1439 |
| **Stage II** | 246 | 72 (29.2) | 195 | 50 (25.6) | 51 | 22 (43.1) |
| **Stage III** | 204 | 50 (24.5) | 152 | 34 (22.3) | 52 | 16 (30.7) |
| **Stage IV** | 187 | 49 (26.2) | 133 | 31 (23.3) | 54 | 18 (33.3) |
| **Function classified by Steinbrocker** |
| **Class 1** | 152 | 75 (49.3) | 107 | 48 (44.8) | \*\*\*< 0.0001 | 45 | 27 (60.0) | \*\*0.0038 |
| **Class 2** | 492 | 140 (28.4) | 380 | 104 (27.3) | 112 | 36 (32.1) |
| **Class 3** | 117 | 15 (12.8) | 99 | 11 (11.1) | 18 | 4 (22.2) |
| **Class 4** | 9 | 0 (0.0) | 8 | 0 (0.0) | 1 | 0 (0.0) |
| **Self-injected (at least once)** |
| **No** | 315 | 78 (24.7) | 264 | 67 (25.3) | NS0.3136 | 51 | 11 (21.5) | \*\*0.0039 |
| **Yes** | 455 | 152 (33.4) | 330 | 96 (29.0) | 125 | 56 (44.8) |
| **Previous medication** |
| **TCZ-IV** |  |  |  |  |  |  |  |  |
| **No** | 544 | 153 (28.1) | 544 | 153 (28.1) | NS0.2178 | 0 | 0 (0.0) | - |
| **Yes** | 226 | 77 (34.0) | 50 | 10 (20.0) | 176 | 67 (38.0) |
| **bDMARD** |  |  |  |  |  |  |  |  |
| **No** | 315 | 122 (38.7) | 248 | 93 (37.5) | \*\*\*< 0.0001 | 67 | 29 (43.2) | NS0.2639 |
| **Yes** | 455 | 108 (23.7) | 346 | 70 (20.2) | 109 | 38 (34.8) |
| **Medication at baseline** |
| **csDMARDS** |
| **No** | 216 | 70 (32.4) | 156 | 46 (29.4) | NS0.5047 | 60 | 24 (40.0) | NS0.7042 |
| **Yes** | 554 | 160 (28.8) | 438 | 117 (26.7) | 116 | 43 (37.0) |
| **Methotrexate** |
| **No** | 341 | 101 (29.6) | 254 | 67 (26.3) | NS0.6157 | 87 | 34 (39.0) | NS0.7845 |
| **Yes** | 429 | 129 (30.0) | 340 | 96 (28.2) | 89 | 33 (37.0) |
| **Glucocorticoids** |
| **No** | 438 | 142 (32.4) | 322 | 90 (27.9) | NS0.7621 | 116 | 52 (44.8) | \*0.0102 |
| **Yes** | 332 | 88 (26.5) | 272 | 73 (26.8) | 60 | 15 (25.0) |
| **Concurrent disease** |
| **No** | 310 | 112 (36.1) | 255 | 82 (32.1) | \*0.0254 | 55 | 30 (54.5) | \*\*0.0024 |
| **Yes** | 460 | 118 (25.6) | 339 | 81 (23.8) | 121 | 37 (30.5) |
| **Respiratory disease** |
| **No** | 677 | 212 (31.3) | 528 | 150 (28.4) | NS0.1347 | 149 | 62 (41.6) | \*0.0229 |
| **Yes** | 93 | 18 (19.3) | 66 | 13 (19.6) | 27 | 5 (18.5) |
| **Hepatic function disorder** |
| **No** | 721 | 221 (30.6) | 562 | 158 (28.1) | NS0.1235 | 159 | 63 (39.6) | NS0.1939 |
| **Yes** | 49 | 9 (18.3) | 32 | 5 (15.6) | 17 | 4 (23.5) |
| **Renal disease** |
| **No** | 748 | 222 (29.6) | 575 | 156 (27.1) | NS0.3506 | 173 | 66 (38.1) | NS0.8647 |
| **Yes** | 22 | 8 (36.3) | 19 | 7 (36.8) | 3 | 1 (33.3) |
| **Diabetes mellitus** |
| **No** | 713 | 215 (30.1) | 551 | 153 (27.7) | NS0.5230 | 162 | 62 (38.2) | NS0.8500 |
| **Yes** | 57 | 15 (26.3) | 43 | 10 (23.2) | 14 | 5 (35.7) |

bDMARD, biologic disease-modifying antirheumatic drug; BMI, body mass index; CDAI, Clinical Disease Activity Index; csDMARD, conventional synthetic disease-modifying antirheumatic drug; IV, intravenous; NS, not significant; TCZ, tocilizumab.

**Supplemental Table 3.** DAS28-ESR Remission by Baseline Characteristics

|  |  |  |  |
| --- | --- | --- | --- |
|  | **All Patients** | **TCZ Naïve** | **TCZ-IV-SC** |
| **Category** | **Total Patients** | **Achieved Remission,** **n (%)** | **Total Patients** | **Achieved Remission, n (%)** | ***P* value** | **Total Patients** | **Achieved Remission, n (%)** | ***P* value** |
| **Total patients** | 683 | 394 (57.6) | 519 | 279 (53.7) |  | 164 | 115 (70.1) |  |
| **Male** | 98 | 61 (62.2) | 80 | 48 (60.0) | NS0.2233 | 18 | 13 (72.2) | NS0.8365 |
| **Female** | 585 | 333 (56.9) | 439 | 231 (52.6) | 146 | 102 (69.8) |
| **Age, years** |
| **< 15** | 0 | 0 (0.0) | 0 | 0 (0.0) | NS0.0208 | 0 | 0 (0.0) | NS0.3528 |
| **≥ 15 to < 65** | 373 | 232 (62.1) | 277 | 162 (58.4) | 96 | 70 (72.9) |
| **≥ 65** | 310 | 162 (52.2) | 242 | 117 (48.3) | 68 | 45 (66.1) |
| **Body weight, kg** |
| **< 40** | 17 | 9 (52.9) | 14 | 7 (50.0) | NS0.8759 | 3 | 2 (66.6) | NS0.8874 |
| **≥ 40 to < 60** | 503 | 295 (58.6) | 380 | 207 (54.4) | 123 | 88 (71.5) |
| **≥ 60** | 150 | 84 (56.0) | 113 | 59 (52.2) | 37 | 25 (67.5) |
| **Unknown** | 13 | 6 (46.1) | 12 | 6 (50.0) |  | 1 | 0 (0.0) |  |
| **BMI, kg/m2** |
| **< 18.5** | 62 | 33 (53.2) | 46 | 20 (43.4) | NS0.0942 | 16 | 13 (81.2) | NS0.1801 |
| **≥ 18.5 to < 25** | 407 | 242 (59.4) | 301 | 166 (55.1) | 106 | 76 (71.6) |
| **≥ 25 to < 30** | 83 | 39 (46.9) | 60 | 27 (45.0) | 23 | 12 (52.1) |
| **≥ 30** | 13 | 4 (30.7) | 11 | 3 (27.2) | 2 | 1 (50.0) |
| **Unknown** | 118 | 76 (64.4) | 101 | 63 (62.3) |  | 17 | 13 (76.4) |  |
| **Disease duration, years** |
| **< 2** | 114 | 80 (70.1) | 106 | 73 (68.8) | \*\*0.0063 | 8 | 7 (87.5) | NS0.1069 |
| **≥ 2 to < 5** | 110 | 67 (60.9) | 85 | 47 (55.2) | 25 | 20 (80.0) |
| **≥ 5 to < 10** | 152 | 86 (56.5) | 111 | 54 (48.6) | 41 | 32 (78.0) |
| **≥ 10** | 238 | 126 (52.9) | 165 | 81 (49.0) | 73 | 45 (61.6) |
| **Unknown** | 69 | 35 (50.7) | 52 | 24 (46.1) |  | 17 | 11 (64.7) |  |
| **Disease stage classified by Steinbrocker** |
| **Stage I** | 122 | 80 (65.5) | 104 | 66 (63.4) | \*0.0467 | 18 | 14 (77.7) | NS0.7018 |
| **Stage II** | 218 | 131 (60.0) | 172 | 97 (56.3) | 46 | 34 (73.9) |
| **Stage III** | 183 | 98 (53.5) | 132 | 63 (47.7) | 51 | 35 (68.6) |
| **Stage IV** | 160 | 85 (53.1) | 111 | 53 (47.7) | 49 | 32 (65.3) |
| **Function classified by Steinbrocker** |
| **Class 1** | 141 | 100 (70.9) | 98 | 64 (65.3) | \*\*\*0.0001 | 43 | 36 (83.7) | NS0.0688 |
| **Class 2** | 430 | 251 (58.3) | 327 | 182 (55.6) | 103 | 69 (66.9) |
| **Class 3** | 104 | 41 (39.4) | 87 | 32 (36.7) | 17 | 9 (52.9) |
| **Class 4** | 8 | 2 (25.0) | 7 | 1 (14.2) | 1 | 1 (100.0) |
| **Self-injected (at least once)** |
| **No** | 266 | 142 (53.3) | 220 | 111 (50.4) | NS0.1955 | 46 | 31 (67.3) | NS0.6333 |
| **Yes** | 417 | 252 (60.4) | 299 | 168 (56.1) | 118 | 84 (71.1) |
| **Previous medication** |
| **TCZ-IV** |  |  |  |  |  |  |  |  |
| **No** | 471 | 259 (54.9) | 471 | 259 (54.9) | NS0.077 | 0 | 0 (0.0) | - |
| **Yes** | 212 | 135 (63.6) | 48 | 20 (41.6) | 164 | 115 (70.1) |
| **bDMARD** |  |  |  |  |  |  |  |  |
| **No** | 276 | 177 (64.1) | 216 | 131 (60.6) | \*\*0.0078 | 60 | 46 (76.6) | NS0.1642 |
| **Yes** | 407 | 217 (53.3) | 303 | 148 (48.8) | 104 | 69 (66.3) |
| **Medication at baseline** |
| **csDMARDS** |
| **No** | 190 | 101 (53.1) | 134 | 63 (47.0) | NS0.069 | 56 | 38 (67.8) | NS0.6481 |
| **Yes** | 493 | 293 (59.4) | 385 | 216 (56.1) | 108 | 77 (71.2) |
| **Methotrexate** |
| **No** | 302 | 157 (51.9) | 220 | 104 (47.2) | \*0.0110 | 82 | 53 (64.6) | NS0.1246 |
| **Yes** | 381 | 237 (62.2) | 299 | 175 (58.5) | 82 | 62 (75.6) |
| **Glucocorticoids** |
| **No** | 395 | 245 (62.0) | 283 | 158 (55.8) | NS0.2995 | 112 | 87 (77.6) | \*\*0.0019 |
| **Yes** | 288 | 149 (51.7) | 236 | 121 (51.2) | 52 | 28 (53.8) |
| **Concurrent disease** |
| **No** | 270 | 185 (68.5) | 215 | 138 (64.1) | \*\*\*< 0.0001 | 55 | 47 (85.4) | \*\*0.0023 |
| **Yes** | 413 | 209 (50.6) | 304 | 141 (46.3) | 109 | 68 (62.3) |
| **Respiratory disease** |
| **No** | 598 | 357 (59.6) | 460 | 255 (55.4) | \*0.0323 | 138 | 102 (73.9) | \*0.0145 |
| **Yes** | 85 | 37 (43.5) | 59 | 24 (40.6) | 26 | 13 (50.0) |
| **Hepatic function disorder** |
| **No** | 638 | 372 (58.3) | 489 | 266 (54.3) | NS0.2381 | 149 | 106 (71.1) | NS0.3688 |
| **Yes** | 45 | 22 (48.8) | 30 | 13 (43.3) | 15 | 9 (60.0) |
| **Renal disease** |
| **No** | 662 | 383 (57.8) | 501 | 271 (54.0) | NS0.4199 | 161 | 112 (69.5) | NS0.2538 |
| **Yes** | 21 | 11 (52.3) | 18 | 8 (44.4) | 3 | 3 (100.0) |
| **Diabetes mellitus** |
| **No** | 636 | 375 (58.9) | 484 | 267 (55.1) | \*0.0167 | 152 | 108 (71.0) | NS0.3540 |
| **Yes** | 47 | 19 (40.4) | 35 | 12 (34.2) | 12 | 7 (58.3) |

bDMARD, biologic disease-modifying antirheumatic drug; BMI, body mass index; csDMARD, conventional synthetic disease-modifying antirheumatic drug; DAS28-ESR, Disease Activity Score in 28 joints as measured by erythrocyte sedimentation rate; IV, intravenous; NS, not significant; TCZ, tocilizumab.