

SUPPLEMENTARY MATERIAL

Table 1. Demographic information for healthy controls recruited for the study. Data are shown as mean \pm standard deviation.

| Table 1. Demographics | Healthy Controls |
|-----------------------|------------------|
| Total | 12 |
| Mean Age, years | 24 \pm 7 |
| Gender (M:F) | 7:5 |

Table 2. Demographic and Disease Characteristics of Those Who Flared and Did Not Flare Following Discontinuation of Anti-TNF Therapy.

| | 8 Month Phase | | End of Follow-Up | |
|--|--|--|--|--|
| | No. (%) who flared Mean (Median) time to flare ¹ | No. (%) who did not flare Mean (Median) follow-up time among those without flare ¹ | No. (%) who flared Mean (Median) time to flare ¹ | No. (%) who did not flare Mean (Median) follow-up time among those without flare ¹ |
| All patients in whom anti-TNF was stopped (n = 106 unless otherwise shown (%)) | 39 (37) 103 (105) | 67 (63) 249 (250) | 65 (61) 328 (172) | 41 (39) 706 (673) |
| Gender | | | | |
| Females | 29 (39) 98 (105) | 46 (61) 254 (250) | 50 (67) 349 (179) | 25 (33) 654 (643) |
| Males | 10 (32) 118 (126) | 21 (68) 238 (251) | 15 (48) 256 (149) | 16 (52) 786 (834) |
| JIA Diagnosis | | | | |
| Extended oligo | 8 (47) 114 (105) | 9 (53) 242 (244) | 12 (71) 278 (162) | 5 (29) 901 (1154) |
| RF positive poly | 1 (11) 39 (39) | 8 (89) 264 (256) | 4 (44) 660 (722) | 5 (56) 686 (729) |
| RF negative poly | 30 (37) 102 (106) | 50 (63) 248 (250) | 49 (61) 313 (162) | 31 (39) 678 (643) |

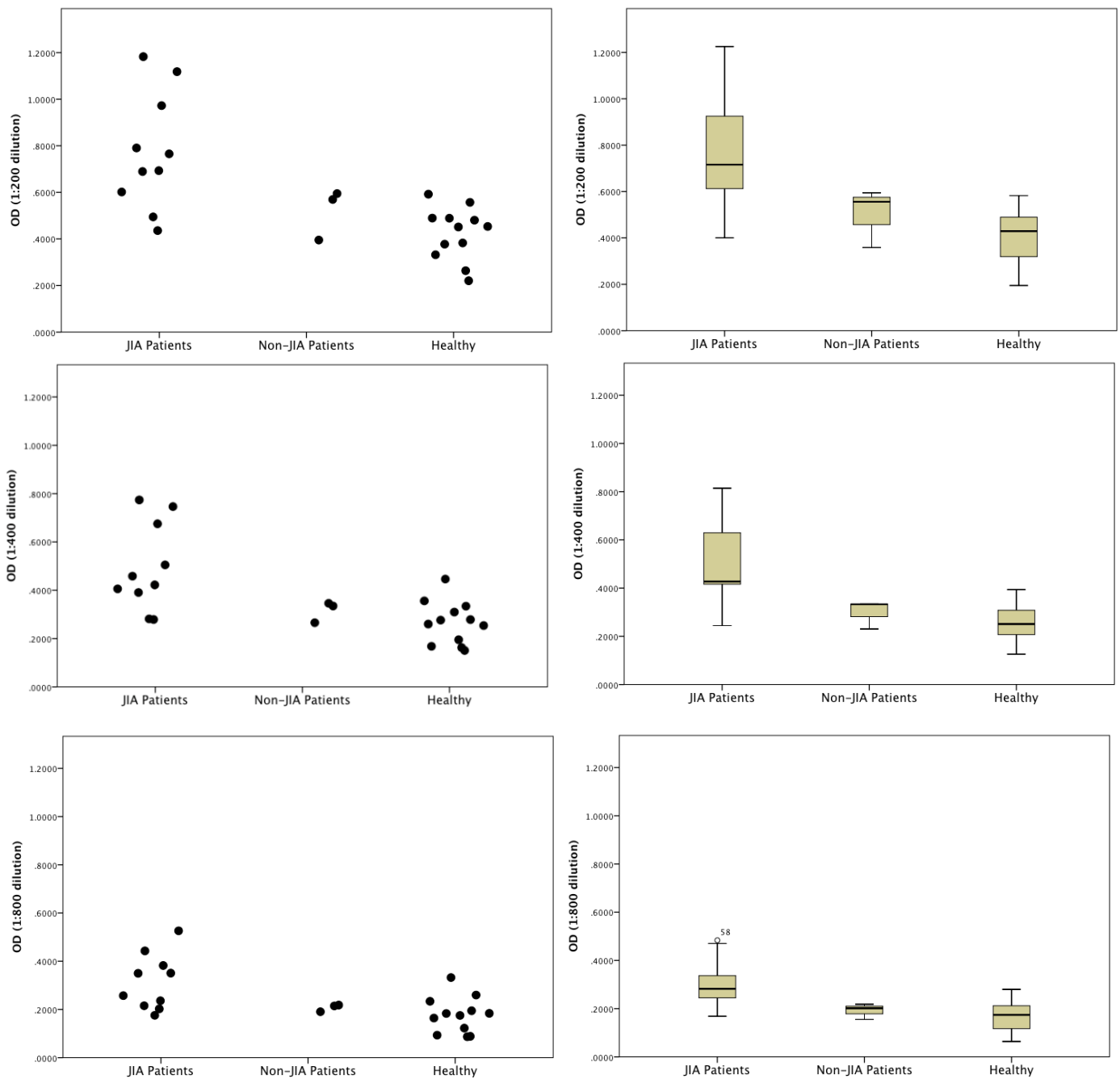
| | | | | |
|--------------------------------------|----------------------|----------------------|----------------------|----------------------|
| ANA (n = 103) ² | | | | |
| Positive | 22 (42) 127 (110) | 31 (58) 249 (252) | 34 (64) 335 (198) | 19 (36) 712 (729) |
| Negative | 15 (30) 63 (33) | 35 (70) 249 (249) | 28 (56) 318 (161) | 22 (44) 701 (671) |
| RF (n = 104) ³ | | | | |
| Positive | 2 (22) 132 (132) | 7 (78) 257 (252) | 5 (56) 573 (687) | 4 (44) 691 (759) |
| Negative | 36 (38) 98 (105) | 59 (62) 248 (250) | 59 (62) 309 (157) | 36 (38) 689 (670) |
| Concurrent Methotrexate | | | | |
| Yes | 13 (32) 88 (105) | 28 (68) 244 (250) | 24 (59) 390 (176) | 17 (41) 291 (172) |
| No | 26 (40) 111 (110) | 39 (60) 252 (252) | 41 (63) 686 (729) | 24 (37) 720 (672) |
| Anti-TNF treatment | | | | |
| Etanercept | 32 (37) 102 (99) | 55 (63) 252 (250) | 51 (59) 297 (172) | 36 (41) 740 (759) |
| Adalimumab | 4 (29) 91 (105) | 10 (71) 250 (252) | 10 (71) 559 (518) | 4 (29) 468 (273) |
| Infliximab | 3 (60) 131 (131) | 2 (40) 171 (171) | 4 (80) 146 (137) | 1 (20) 440 (440) |
| Age at enrollment (yrs) ⁴ | | | | |
| < 10 | 17 (39) 111 (105) | 27 (61) 240 (245) | 28 (64) 320 (201) | 16 (36) 668 (591) |
| ≥ 10 | 22 (35) 97 (110) | 40 (65) 255 (252) | 37 (60) 334 (162) | 25 (40) 730 (729) |

| | | | | |
|---|----------------------|----------------------|----------------------|----------------------|
| Age at onset (yrs) (n = 105) ⁵ | | | | |
| < 5.0 | 25 (46) 110 (105) | 29 (54) 240 (244) | 35 (65) 274 (133) | 19 (35) 621 (510) |
| ≥ 5.0 | 14 (27) 91 (92) | 37 (73) 256 (252) | 29 (57) 364 (192) | 22 (43) 779 (807) |
| Age at diagnosis (yrs) | | | | |
| < 5.0 | 24 (48) 109 (105) | 26 (52) 239 (245) | 31 (62) 218 (112) | 19 (38) 621 (510) |
| ≥ 5.0 | 15 (27) 94 (114) | 41 (73) 255 (252) | 34 (61) 428 (277) | 22 (39) 779 (807) |
| Disease duration at enrollment (mos)(n = 105) ⁵ | | | | |
| < 6 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 |
| 6 – 12 | 0 | 2 (100) 206 (206) | 1 (50) 949 (949) | 1 (50) 131 (131) |
| > 12 | 39 (38) 103 (105) | 64 (61) 532 (250) | 63 (61) 305 (162) | 40 (39) 720 (701) |

| | | | | |
|---|----------------------|----------------------|----------------------|----------------------|
| Age, first occurrence of CID (yrs)(n = 105) ⁵ | | | | |
| < 5.0 | 11 (52) 147 (120) | 10 (48) 223 (245) | 14 (67) 220 (211) | 7 (33) 421 (224) |
| ≥ 5.0 | 28 (33) 86 (99) | 56 (67) 253 (252) | 50 (60) 341 (160) | 34 (40) 764 (792) |
| Time from disease onset to first CID (mos)(n=105) ⁵ | | | | |

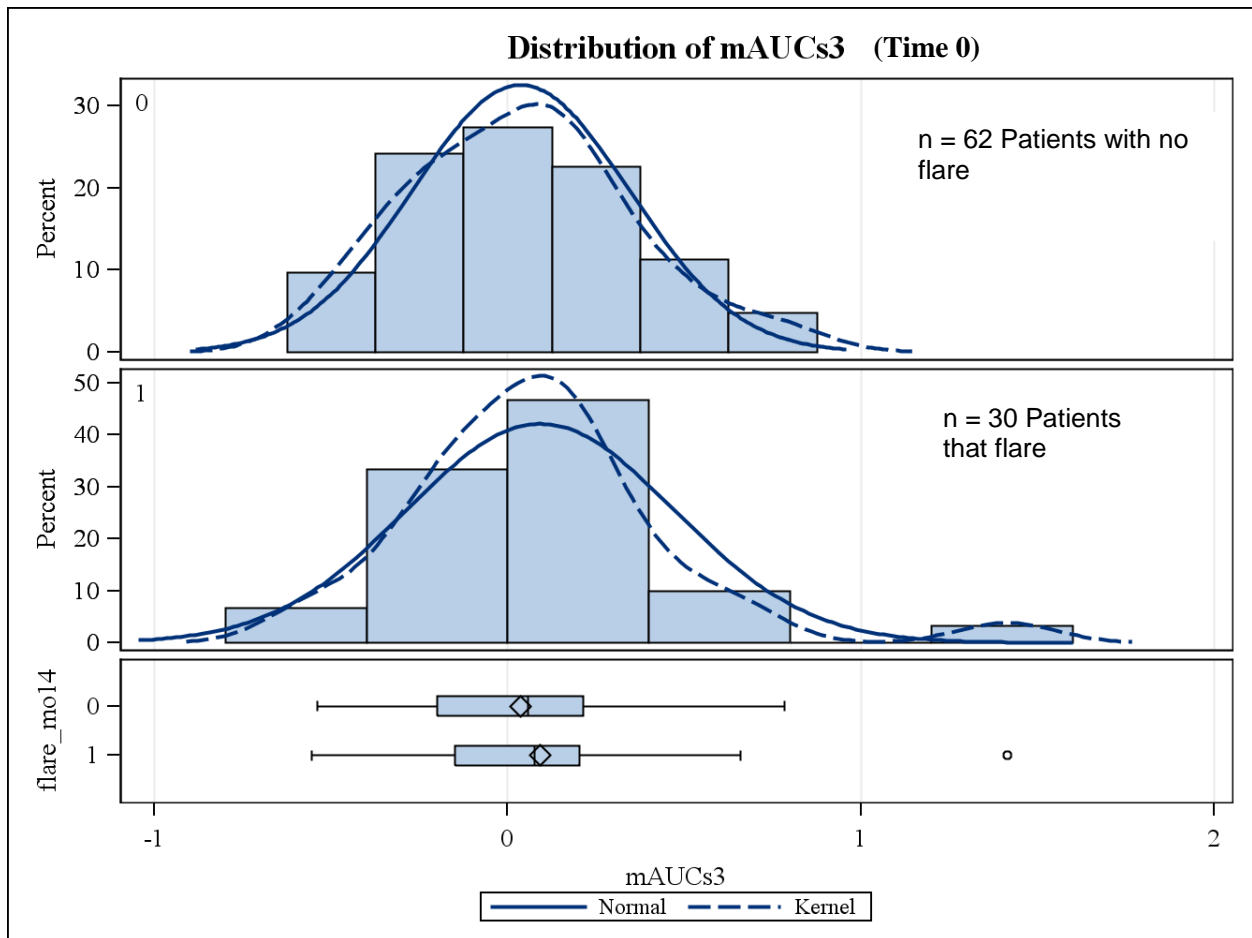
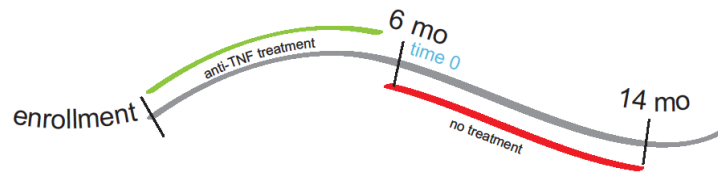
| | | | | |
|---|----------------------|----------------------|----------------------|----------------------|
| < 6 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 |
| 6 – 12 | 3 (19) 129 (106) | 13 (81) 248 (252) | 8 (50) 530 (337) | 8 (50) 768 (959) |
| > 12 | 36 (40) 101 (105) | 53 (60) 249 (250) | 56 (63) 284 (153) | 33 (37) 691 (671) |
| Time from first occurrence of CID to baseline | | | | |
| < 6 | 15 (28) 95 (105) | 39 (72) 256 (252) | 32 (59) 405 (277) | 22 (41) 636 (656) |
| 6 – 12 | 9 (50) 128 (114) | 9 (50) 239 (238) | 12 (67) 289 (182) | 6 (33) 804 (888) |
| > 12 | 15 (44) 96 (105) | 19 (56) 240 (245) | 21 (62) 233 (143) | 13 (38) 779 (805) |
| | | | | |

- 1 Time in days
- 2 Three ANA results unknown
- 3 Two RF results unknown (in order to be included in the analysis the two patients with unknown RF results were considered to be RF (-)).
- 4 Cut-points for continuous numeric variables were chosen based upon clinical relevance and distribution of values in the dataset.
- 5 One value unknown



Supplemental Figure 1. JIA patients have high levels of DEK autoantibodies.

Representative ELISA results with serial dilution of 10 sera samples from patients with JIA, 3 non-JIA patients with other rheumatic diseases, and control sera or plasma from 12 healthy individuals. Samples were serially diluted as indicated and tested for DEK antibody levels. Results shown are the optical density (O.D.) obtained in this individual ELISA minus the background.



Supplemental Figure 2. DEK antibody levels at the time of stopping anti-TNF therapy do not predict the probability of subsequent disease flare. 92 out of 106 patient samples were available and analyzed for DEK antibody levels. Sera collected at time 0 (after six months of successful anti-TNF treatment) were analyzed for DEK antibody levels. DEK antibody levels with a mean and SD of 0.0917 ± 0.38 were detected in the 30 patients that flared within 14 months as compared to DEK antibody levels and SD of 0.0365 ± 0.3 in 62 patients with clinically inactive disease (CID) for at least 14 months (Student T-test, $P=0.49$).