**Supplementary Table 1.** Baseline characteristics by enrollment status.

| Variable | Level | Did not enroll (n=23) | Enrolled (n=120) | p-value |
|---|---|---|---|---|
| Age at baseline | Years | 63.6±10.8 n=22 | 61.7±10.7 | 0.45 |
| Sex | Female | 16 (73%) | 99 (83%) | 0.37 |
| Race | White | 17 (81%) | 95 (81%) | 0.10 |
|  | Black or African American | 1 (5%) | 12 (10%) | |
| Duration of symptoms | | 11.1 [5.0, 27.0] n=16 | 14.8 [6.8, 24.8] n=116 | 0.54 |
| **RF Result Interpretation** | **Positive** | **4 (17%)** | **51 (43%)** | **0.007** |
| **Anti-CCP Interpretation** | **Positive** | **4 (17%)** | **51 (43%)** | **0.015** |
| **Is the participant currently using methotrexate?** | **Yes** | **4 (20%)** | **62 (52%)** | **0.008** |
| **Is the participant currently taking a biologic?** | **Yes** | **4 (20%)** | **61 (51%)** | **0.014** |
| **RADAI, adjusted** | | **4.0 [0.0, 8.0]** | **8.0 [5.0, 15.0]** | **<0.001** |
| **DAS28-ESR** | | **2.7±1.8 n=13** | **3.7±1.5 n=109** | **0.026** |
| RAPID3 | | 15.7 [13.5, 17.9] n=16 | 16.0 [12.2, 19.0] n=116 | 0.82 |
| CRP result | mg/dL (0 if below detection) | 1.0 [0.0, 1.2] n=16 | 1.2 [0.0, 2.1] n=115 | 0.24 |
| ESR result | mm/hr | 10.0 [6.0, 31.0] n=15 | 13.0 [5.0, 26.0] n=117 | 0.88 |

**Supplementary Table 2.** Baseline characteristics of knee v. hip patients.

| Variable | Level | Hip (n=53) | Knee (n=67) | p-value |
|---|---|---|---|---|
| Age at baseline | Years | 60.8±12.4 | 62.5±9.1 | 0.38 |
| Sex | Female | 40 (75%) | 59 (88%) | 0.09 |
| Race | White | 45 (85%) | 50 (77%) | 0.75 |
| | Black or African American | 4 (8%) | 8 (12%) | |
| BMI | kg/m$^2$ | 27.3 [25.3, 33.0] | 28.8 [23.7, 34.6] | 0.88 |
| Duration of symptoms | | 12.1 [5.4, 24.5] | 16.1 [8.9, 25.3] | 0.30 |
| | | n=52 | n=64 | |
| DAS28-ESR | | 3.6±1.5 | 3.8±1.5 | 0.66 |
| | | n=47 | n=62 | |
| RAPID3 | | 14.9±5.5 | 16.0±5.0 | 0.26 |
| | | n=52 | n=64 | |
| RADAI, adjusted | | 7.0 [5.0, 14.0] | 9.0 [4.0, 16.0] | 0.97 |
| Baseline CDAI | | 19.0 [14.0, 23.0] | 17.0 [10.0, 27.0] | 0.52 |
| | | n=45 | n=59 | |
| Is the participant currently using methotrexate? | Yes | 30 (57%) | 32 (48%) | 0.46 |
| Is the participant currently using steroids? | Yes | 17 (32%) | 22 (33%) | 1.00 |
| Is the participant currently taking a biologic? | Yes | 25 (47%) | 36 (55%) | 0.46 |
| Is the participant currently taking any other DMARD? | Yes | 15 (28%) | 19 (29%) | 1.00 |
| RA criteria: | Meets BOTH criteria | 17 (32%) | 31 (46%) | 0.10 |
| | Meets only 2010 criteria | 12 (23%) | 20 (30%) | |
| | Meets only 1987 criteria | 10 (19%) | 8 (12%) | |
| | Does not meet criteria, included by opinion of PI | 14 (26%) | 8 (12%) | |
| Patients with flares | | 36 (68%) | 39 (58%) | 0.34 |

**Supplementary Table 3.** Logistic regression to predict flare, all patients.

| Univariate variable, all patients | Level | Odds ratio (95% CI) for flare | p-value |
|---|---|---|---|
| Age at baseline | Years | 0.99 (0.95 - 1.02) | 0.42 |
| Sex | Female | 2.10 (0.81 - 5.45) | 0.13 |
| Race | White | 0.27 (0.07 - 1.00) | 0.051 |
| | Minority | 1.00 (reference) | -- |
| BMI | kg/m$^2$ | 1.04 (0.98 - 1.10) | 0.18 |
| Have you ever smoked cigarettes? | Yes | 1.23 (0.58 - 2.61) | 0.58 |
| Highest level of education completed | College/university graduate or above or Some college/university or AA degree | 2.10 (0.70 - 6.25) | 0.18 |
| | Graduated from high school/GED or equivalent, or Some secondary/high school | 1.00 (reference) | -- |
| **RA criteria:** | **Meets BOTH criteria** | **5.89 (1.96 - 17.66)** | **0.002** |
| | Meets only 2010 criteria | 2.92 (0.95 - 8.99) | 0.06 |
| | Meets only 1987 criteria | 2.19 (0.61 - 7.81) | 0.23 |
| | **Does not meet criteria, included by opinion of PI** | **1.00 (reference)** | **--** |
| Is the participant currently using methotrexate? | Yes | 0.92 (0.44 - 1.94) | 0.83 |
| Is the participant currently using steroids? | Yes | 1.88 (0.82 - 4.30) | 0.13 |
| Is the participant currently taking a biologic? | Yes | 1.80 (0.85 - 3.80) | 0.13 |
| Is the participant currently taking any other DMARD? | Yes | 1.68 (0.71 - 3.95) | 0.23 |
| Intra-op steroids? | Yes | 1.14 (0.37 - 3.44) | 0.82 |
| RF Result Interpretation | Positive | 1.66 (0.77 - 3.57) | 0.20 |
| | Negative | 1.00 (reference) | -- |
| Anti-CCP Interpretation | Positive | 1.75 (0.80 – 3.78) | 0.16 |
| | Negative | 1.00 (reference) | -- |
| **KOOS Pain** | | **0.95 (0.91 - 0.99)** | **0.009** |
| **KOOS Activity** | | **0.96 (0.93 - 0.99)** | **0.017** |
| Duration of symptoms, square root | | 0.97 (0.77 - 1.23) | 0.83 |
| **DAS28-ESR** | > 2.6 to ≤ 3.2 | 0.36 (0.06 – 1.99) | 0.240 |
| | **> 3.2 to ≤ 5.1** | **4.27 (1.59 – 11.46)** | **0.004** |
| | **> 5.1** | **25.59 (2.93 – 223.92)** | **0.003** |
| | **≤ 2.3** | **1.00 (reference)** | **--** |
| **RAPID3** | | **1.18 (1.08 - 1.28)** | **<0.001** |
| CRP ≤ 1.0 mg/dL | Yes | 0.56 (0.26 - 1.19) | 0.13 |
| **CRP ≤ 1.5 mg/dL** | **Yes** | **0.29 (0.12 - 0.70)** | **0.006** |
| **CRP ≤ 2.0 mg/dL** | **Yes** | **0.17 (0.06 - 0.54)** | **0.002** |
| **ESR result, age/sex specific normal** | **Normal** | **0.30 (0.11 - 0.88)** | **0.027** |
| **MD HAQ** | | **1.42 (1.08 - 1.87)** | **0.011** |