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Oligoarticular vs Polyarticular Psoriatic Arthritis: A Longitudinal Study Showing Similar Characteristics

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ABSTRACT. ***Objective.*** The objectives of this study were to determine whether patients with oligoarticular presentation differ from those with polyarticular presentation and to identify potential predictors for evolution of oligoarthritis to polyarthritis in patients with psoriatic arthritis (PsA).

Methods. Patients who entered the University of Toronto PsA clinic between 1978 and 2018 within 12 months of diagnosis were identified. Only patients with ≥ 2 clinic visits were included. Patients were followed at 6- to 12-month intervals according to standard protocol, which included demographics, clinical history, detailed clinical examination, laboratory information, and patient questionnaires. Radiographs were done at 2-year intervals. *Oligoarthritis* was defined by the presence of ≤ 4 inflamed joints and *progression* as an increase to ≥ 5 joints. Statistical analyses included logistic regression models as well as Weibull regression models, adjusted for age, disease duration, and sex.

Results. Of 407 patients, 192 (47%) presented with oligoarthritis. Whereas demographic features were similar to those with polyarthritis, more patients with polyarthritis presented with dactylitis and enthesitis. Similar joint distribution was observed, with small joints of the hands and feet being most commonly affected. Patients with polyarthritis had higher Health Assessment Questionnaire and lower 36-item Short Form Health Survey (SF-36) scores. Of the 192 oligoarticular patients, 117 (61%) remained oligoarticular and 75 (39%) progressed to polyarthritis. A lower SF-36 mental component summary (MCS) score was the predictor for progressing to polyarthritis.

Conclusion. Oligoarticular PsA occurs in 47% of patients with PsA and is similar to polyarticular disease, with most patients having small joint involvement. The only predictor for progression to polyarthritis was lower SF-36 MCS.

Key Indexing Terms: oligoarthritis, outcome, polyarthritis, progression, psoriatic arthritis

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In Moll and Wright's original description of psoriatic arthritis (PsA), the authors identified oligoarticular disease, defined as ≤ 4 joints, as the most frequent pattern observed.[1] However, the prevalence of oligoarticular disease has varied in subsequently reported series.[2,3] Moreover, it has been demonstrated that the patterns do not necessarily remain stable over time.[4] Patients may present with oligoarticular disease but become polyarticular over time. Others may start with polyarticular disease but may reduce their joint counts either due to treatment or by the natural course of disease. Helliwell, *et al* suggested that patients with PsA should be classified as having peripheral arthritis, axial disease, or both.[5] The Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA) proposed that PsA should be considered as having domains rather than patterns.[6] These domains include peripheral arthritis (which may include distal, oligoarticular, and polyarticular), axial disease, dactylitis, enthesitis, and skin and nail involvement.

In the past 2 decades, many new medications have been approved for the treatment of PsA.[7,8] Many of the randomized controlled trials required 5 tender and swollen joints, whereas others required only 3 tender and swollen joints and had an average of 20 tender and 15 swollen joints; in some jurisdictions, patients with oligoarticular disease (< 5 joints) are not able to

receive biologic therapy.[9] It remains unclear whether patients with oligoarticular disease differ from those with polyarticular disease and what characteristics predict progression from oligoarticular to polyarticular disease.

The objectives of this study were to (1) determine whether patients with oligoarticular presentation differ from those with polyarticular presentation in terms of demographics, clinical characteristics, and treatment; and (2) identify potential predictors for the evolution of oligoarthritis to polyarthritis in patients with PsA.

METHODS

Setting. The study was conducted at the University of Toronto PsA Program where patients have been followed prospectively since 1978. This study was approved by the University Health Network Research Ethics Board (REB No. 08-0630-AE); patients consented to this study and agreed to the publication of the material.

Patient selection. Patients who entered the clinic within 12 months of diagnosis between 1978 and 2018 were identified. Only patients with at least 2 clinic visits were included.

Patient assessments. Patients were followed according to a standard protocol at 6- to 12-month intervals. The following were collected at each scheduled clinic visit: demographics, clinical history, and detailed clinical examination including 68 tender and 66 swollen joint counts (the collected information has been consistent since the initiation of the clinic); and laboratory information. Radiographs were performed at 2-year intervals. These patients had completed patient-reported outcomes annually, including the Health Assessment Questionnaire (HAQ) and the 36-item Short Form Health Survey (SF-36). The information was recorded in a computerized database.[10,11] Physicians involved in patient care were instructed on the procedure for patient assessments; these clinic assesssments were therefore carried out uniformly. These assessments have been demonstrated to be reliable.[12,13]

Definition of outcomes. Two definitions of oligoarthritis were used. First, *oligoarthritis* was defined based on the presence of ≤ 4 inflamed (tender and/or swollen) joints (out of a total of 68 tender and/or 66 swollen joints recorded for each patient). Tender and/or swollen joints are considered inflamed. We have demonstrated that patients with PsA, unlike with rheumatoid arthritis, may have inflammatory changes on magnetic resonance imaging even if the joint is just tender and not swollen.[14] Since patients with PsA may have had inflamed joints prior to entry at the clinic but may have developed damage as a consequence of previous inflammation,[15,16] we also used a definition of ≤ 4 involved joints (including both inflamed and damaged joints).

Polyarthritis was defined as ≥ 5 inflamed joints in the first instance, or ≥ 5 involved joints in the second, as defined above. *Progression* was defined by the transition from oligoarthritis to polyarthritis, which is known to have occurred upon the first visit the joint count exceeded 4.

Statistical analysis. Descriptive statistics were computed to describe patients presenting with oligoarthritis or polyarthritis upon recruitment. Logistic regression models were fitted for the binary response indicating presentation with polyarthritis vs oligoarthritis. ORs, 95% CIs, and *P* values were reported for each covariate. For individuals presenting with oligoarthritis, Weibull regression models were fitted to model the time of progression to polyarticular disease, accommodating left truncation and interval censoring of the progression time.[17] HRs, 95% CIs, and *P* values were reported from these fitted models which adjusted for age, duration of PsA, and sex; analysis was restricted to patients who had complete covariate information. All significance thresholds were set at $P < 0.05$. Descriptive statistics were computed, logistic regression models were fitted using SAS 9.4 (SAS Institute), and Weibull regression models fitted using TIBCO SpotFire S+ Version 8.2.0 (TIBCO Software Inc.).

RESULTS

There were 407 patients included in the analyses. Of those, 192 (47%) presented with oligoarthritis and 215 (53%) with polyarthritis. Demographic features were similar between the 2 groups (Table 1). As expected, polyarticular involvement was associated with a higher number of actively inflamed joints. More patients who presented with polyarticular disease had dactylitis and enthesitis. However, the distribution of joints involved was similar in the 2 groups, with small joints of the hands and feet being most commonly affected (Table 1). Patients with polyarticular presentation had higher HAQ scores, and lower SF-36 physical (PCS) and mental component summary (MCS) scores, reflecting reduced function.

Table 2 presents the results of a logistic regression analysis with polyarthritis vs oligoarthritis as outcome for all 407 patients but includes only those variables available for all patients at baseline. Involvement of the lower extremity small joints had the highest ORs for presentation with polyarthritis, but it should be noted that the CIs are wide.

Of the 407 patients, 228 had complete baseline covariate information. The results from fitting a logistic regression model with polyarthritis vs oligoarthritis as outcome is presented in Table 3. Again, involvement of the lower extremity small joints (in the full multivariate model) had the highest ORs for presentation with polyarthritis, albeit with wide CIs. In this analysis, which included patient reported outcomes, a lower SF-36 PCS was associated with polyarticular presentation. There were no differences in the presence of dactylitis, enthesitis, axial disease, Psoriasis Area Severity Index score, elevated acute-phase reactant, or medication use.

Of the 192 patients who presented with oligoarthritis, 117 (61%) remained oligoarticular and 75 (39%) evolved into polyarticular disease. We developed 2 Weibull regression models to examine the progression from oligoarthritis to polyarthritis. All models were adjusted for age, disease duration, and sex, and included only patients who had complete covariate information at each clinic visit. The first analysis that excluded dactylitis, enthesitis, and axial disease included 136 oligoarticular patients, of whom 46 evolved into polyarthritis. This model revealed that the presence of upper extremity small joints predicted progression, whereas higher SF-36 PCS (better function) protected from progression to polyarthritis (Table 4). The second Weibull regression model included dactylitis, enthesitis, and axial disease, and demonstrated that only lower SF-36 MCS was significantly associated with progression to polyarthritis (Table 5). It should be noted that treatment did not have an effect on progression in either model.

When we considered the definition of oligoarthritis based on involved (inflamed and/or damaged) joints, the number of patients with oligoarthritis reduced to 185, with 39.5% having evolved into polyarticular disease, as some patients had evidence of damage that increased the number of involved joints. However, the demographic and clinical features are similar (Table 1). The factors associated with progression remained the same (results not shown).

Table 1. Patient characteristics at baseline.

	Based on Active[a] Joints		Based on Involved[b] Joints	
	Oligoarthritis	Polyarthritis	Oligoarthritis	Polyarthritis
No. of patients, n	192	215	185	222
Duration of follow-up, yrs	9.3 (9.1)	10.1 (8.7)	9.2 (9.0)	10.2 (8.8)
Males, n (%)	117 (60.9)	121 (56.3)	112 (60.5)	126 (56.8)
Age at psoriasis diagnosis, yrs	29.1 (14.6)	31.4 (16.1)	28.6 (14.4)	31.7 (16.0)
Age at PsA diagnosis, yrs	42.5 (12.9)	43.6 (13.3)	42.0 (12.7)	43.9 (13.4)
Duration of PsA, yrs	0.4 (0.5)	0.5 (0.7)	0.4 (0.5)	0.5 (0.7)
BMI	28.5 (6.4)	30.5 (7.8)	28.3 (5.9)	30.7 (8.1)
PASI	4.0 (7.1)	5.1 (9.3)	4.1 (7.1)	5.1 (9.2)
Actively inflamed joints	1.8 (1.4)	13.8 (9.5)	1.8 (1.4)	13.5 (9.6)
Dactylitis, %	16.1	34.9	15.1	35.1
Enthesitis, %	16.1	28.8	16.2	28.4
Axial disease, %	11.5	17.2	10.8	17.6
Extremities, %				
UE SJ	42.2	87.9	42.2	88.3
UE LJ	19.3	54.4	18.9	55.0
LE SJ	22.4	78.1	23.2	78.8
LE LJ	21.4	50.7	20.0	51.8
HAQ-DI	0.4 (0.4)	0.7 (0.6)	0.4 (0.4)	0.7 (0.6)
SF-36 PCS	43.7 (10.5)	37.0 (11.3)	43.7 (10.5)	37.1 (11.3)
SF-36 MCS	45.5 (11.0)	43.7 (10.5)	45.6 (11.0)	43.6 (10.5)
Highest medication, %				
NSAIDs	34.9	28.8	35.7	28.4
DMARDs	13.5	17.7	13.0	18.0
Biologics	5.7	3.7	5.9	3.6

Values are expressed as mean (SD) unless otherwise indicated. [a] Active joints: tender and/or swollen joints. [b] Involved joints: active and/or damaged joints. DMARD: disease-modifying antirheumatic drug; HAQ-DI: Health Assessment Questionnaire–Disability Index; LE: lower extremity; LJ: large joint; MCS: mental component summary score; NSAID: nonsteroidal antiinflammatory drugs; PASI: Psoriasis Area Severity Index; PCS: physical component summary score; PsA: psoriatic arthritis; SF-36: 36-item Short Form Health Survey; SJ: small joint; UE: upper extremity.

Table 2. Features associated with presenting with polyarthritis vs oligoarthritis based on all patients[a].

Covariate	Univariate Analysis		Multivariate Analysis			
			Full Model		Reduced Model	
	OR (95% CI)	*P*	OR (95% CI)	*P*	OR (95% CI)	*P*
Age, yrs			1.02 (0.99–1.04)	0.20	1.02 (0.99–1.04)	0.13
PsA duration, yrs			1.42 (0.88–2.32)	0.15	1.41 (0.89–2.21)	0.14
Sex (M vs F)			0.81 (0.44–1.51)	0.53	0.93 (0.51–1.69)	0.80
LE SJ	13.52 (8.30–22.03)	< 0.001	17.80 (9.17–34.55)	< 0.001	17.15 (9.04–32.56)	< 0.001
UE SJ	9.93 (6.00–16.44)	< 0.001	17.10 (8.24–35.50)	< 0.001	15.69 (7.72–31.89)	< 0.001
LE LJ	3.87 (2.48–6.02)	< 0.001	3.49 (1.75–6.95)	< 0.001	3.71 (1.87–7.37)	< 0.001
UE LJ	5.03 (3.20–7.90)	< 0.001	5.14 (2.62–10.08)	< 0.001	4.71 (2.45–9.03)	< 0.001
Enthesitis	2.12 (1.30–3.46)	0.003	1.62 (0.76–3.45)	0.21		
PASI	1.02 (0.99–1.04)	0.18	1.03 (0.99–1.07)	0.19		
Highest medication						
NSAIDs	0.74 (0.47–1.16)	0.19	0.62 (0.31–1.20)	0.16		
DMARDs	1.14 (0.64–2.05)	0.65	1.37 (0.52–3.61)	0.52		
Biologics	0.57 (0.22–1.49)	0.25	0.65 (0.15–2.89)	0.57		

[a] Based on 407 patients with only the covariate information available at baseline clinic visit (215 with polyarthritis, 192 with oligoarthritis). DMARD: disease-modifying antirheumatic drug; LE: lower extremity; LJ: large joint; NSAID: nonsteroidal antiinflammatory drugs; PASI: Psoriasis Area Severity Index; PsA: psoriatic arthritis; SJ: small joint; UE: upper extremity.

Table 3. Features associated with presenting with polyarthritis vs oligoarthritis based on 228 patients[a].

Covariate	Univariate Analysis		Multivariate Analysis			
			Full Model		Reduced Model	
	OR (95% CI)	*P*	OR (95% CI)	*P*	OR (95% CI)	*P*
Age, yrs			0.99 (0.96–1.03)	0.63	0.99 (0.96–1.02)	0.54
PsA duration, yrs			1.45 (0.42–5.00)	0.56	1.50 (0.48–4.66)	0.48
Sex (M vs F)			0.55 (0.22–1.35)	0.19	0.73 (0.32–1.69)	0.46
LE SJ	13.66 (7.13–26.17)	< 0.001	20.12 (6.97–58.08)	< 0.001	16.15 (6.79–38.43)	< 0.001
UE SJ	8.84 (4.47–17.51)	< 0.001	18.55 (6.45–53.33)	< 0.001	16.29 (6.15–43.17)	< 0.001
LE LJ	4.14 (2.27–7.56)	< 0.001	3.58 (1.25–10.23)	0.02	3.39 (1.34–8.62)	0.01
UE LJ	4.42 (2.44–8.01)	< 0.001	5.37 (1.99–14.44)	< 0.001	3.93 (1.62–9.53)	0.002
Dactylitis	2.36 (1.22–4.58)	0.01	1.39 (0.44–4.41)	0.58		
Enthesitis	2.70 (1.44–5.07)	0.002	1.45 (0.52–4.06)	0.48		
Axial disease	1.58 (0.75–3.33)	0.23	1.07 (0.31–3.69)	0.92		
PASI	1.03 (0.99–1.07)	0.10	1.05 (0.99–1.10)	0.09		
HAQ	2.60 (1.48–4.57)	< 0.001	0.52 (0.13–2.15)	0.37		
SF-36 PCS	0.95 (0.93–0.98)	< 0.001	0.94 (0.88–1.00)	0.04	0.96 (0.92–1.00)	0.03
SF-36 MCS	0.99 (0.96–1.01)	0.31	1.01 (0.97–1.06)	0.56		
Elevated APR	1.53 (0.90–2.64)	0.12	0.64 (0.26–1.57)	0.33		
Highest medication						
NSAIDs	0.51 (0.28–0.96)	0.04	0.38 (0.14–1.04)	0.06		
DMARDs	0.81 (0.38–1.72)	0.58	0.56 (0.14–2.30)	0.42		
Biologics	0.74 (0.23–2.44)	0.63	1.28 (0.19–8.80)	0.80		

[a] Based on 228 patients with complete covariate information at baseline clinic visit (126 with polyarthritis, 102 with oligoarthritis). APR: acute-phase reactant; DMARD: disease-modifying antirheumatic drug; HAQ-DI: Health Assessment Questionnaire–Disability Index; LE: lower extremity; LJ: large joint; MCS: mental component summary score; NSAID: nonsteroidal antiinflammatory drugs; PASI: Psoriasis Area Severity Index; PCS: physical component summary score; PsA: psoriatic arthritis; SF-36: 36-item Short Form Health Survey; SJ: small joint; UE: upper extremity.

Table 4. Features associated with progression from oligoarthritis to polyarthritis based on 136 patients (excluding dactylitis, enthesitis, and axial disease)[a].

Covariate	Univariate Analysis		Multivariate Analysis			
			Full Model		Reduced Model	
	HR (95% CI)	*P*	HR (95% CI)	*P*	HR (95% CI)	*P*
Age, yrs			1.00 (0.98–1.04)	0.57	1.01 (0.99–1.04)	0.30
PsA duration, yrs			0.99 (0.88–1.12)	0.89	0.97 (0.86–1.09)	0.61
Sex (M vs F)			0.84 (0.43–1.62)	0.60	0.87 (0.47–1.61)	0.66
LE SJ	1.18 (0.51–2.72)	0.70	1.04 (0.44–2.48)	0.93		
UE SJ	1.97 (1.04–3.72)	0.04	1.99 (1.03–3.84)	0.05	2.01 (1.08–3.77)	0.03
LE LJ	0.58 (0.80–3.12)	0.19	1.64 (0.77–3.54)	0.20		
UE LJ	1.36 (0.59–3.12)	0.47	1.27 (0.55–2.94)	0.58		
HAQ	2.42 (1.26–4.67)	0.008	1.27 (0.49–3.31)	0.64		
SF-36 PCS	0.96 (0.93–0.99)	0.008	0.98 (0.94–1.01)	0.19	0.96 (0.94–0.99)	0.006
SF-36 MCS	0.97 (0.94–0.99)	0.02	0.98 (0.95–1.01)	0.16		
PASI	1.02 (0.98–1.06)	0.43	1.01 (0.97–1.05)	0.68		
Elevated APR	1.04 (0.58–1.87)	0.90	0.92 (0.48–1.74)	0.80		
Highest medication						
NSAIDs	0.64 (0.28–1.45)	0.28	0.77 (0.32–1.87)	0.56		
DMARDs	1.51 (0.68–3.36)	0.31	1.82 (0.77–4.32)	0.18		
Biologics	0.96 (0.34–2.69)	0.93	1.14 (0.38–3.43)	0.81		

[a] Based on 136 patients with only the covariate information available at each clinic visit (46 progressed to polyarthritis). APR: acute-phase reactant; DMARD: disease-modifying antirheumatic drug; HAQ-DI: Health Assessment Questionnaire–Disability Index; LE: lower extremity; LJ: large joint; MCS: mental component summary score; NSAID: nonsteroidal antiinflammatory drugs; PASI: Psoriasis Area Severity Index; PCS: physical component summary score; PsA: psoriatic arthritis; SF-36: 36-item Short Form Health Survey; SJ: small joint; UE: upper extremity.

DISCUSSION

Oligoarticular PsA was initially considered the most common pattern of PsA.[1] Moll and Wright noted that 70% of their patients presented with oligoarthritis. However, in subsequent studies, the frequency of oligoarthritis has varied widely from 25% to 65%.[2,3]

Table 5. Features associated with progression from oligoarthritis to polyarthritis based on 128 patients (including dactylitis, enthesitis, and axial disease)[a].

Covariate	Univariate Analysis		Multivariate Analysis			
			Full Model		Reduced Model	
	HR (95% CI)	*P*	HR (95% CI)	*P*	HR (95% CI)	*P*
Age, yrs			1.01 (0.98–1.04)	0.35	1.02 (0.99–1.04)	0.18
PsA duration, yrs			0.99 (0.86–1.13)	0.86	0.96 (0.84–1.09)	0.53
Sex (M vs F)			0.90 (0.45–1.79)	0.76	0.87 (0.46–1.62)	0.66
LE SJ	0.96 (0.40–2.34)	0.93	0.83 (0.32–2.15)	0.69		
UE SJ	1.81 (0.94–3.50)	0.08	1.89 (0.94–3.78)	0.07		
LE LJ	1.54 (0.76–3.13)	0.23	1.73 (0.77–3.86)	0.18		
UE LJ	1.37 (0.59–3.16)	0.47	1.37 (0.58–3.23)	0.48		
Dactylitis	1.32 (0.50–3.49)	0.58	1.81 (0.63–5.24)	0.27		
Enthesitis	1.68 (0.73–3.84)	0.22	1.67 (0.68–4.07)	0.26		
Axial disease	0.57 (0.20–1.61)	0.29	0.64 (0.22–1.88)	0.41		
PASI	1.02 (0.98–1.05)	0.45	1.00 (0.97–1.05)	0.67		
HAQ	2.14 (1.09–4.20)	0.03	1.09 (0.40–3.01)	0.86		
SF-36 PCS	0.96 (0.94–0.99)	0.02	0.98 (0.94–1.02)	0.30		
SF-36 MCS	0.97 (0.94–0.99)	0.01	0.97 (0.94–1.00)	0.06	0.97 (0.94–0.99)	0.01
Elevated APR	1.06 (0.58–1.87)	0.84	0.99 (0.50–1.93)	0.97		
Highest medication						
NSAIDs	0.60 (0.26–1.37)	0.22	0.76 (0.31–1.86)	0.54		
DMARDs	1.13 (0.48–2.62)	0.78	1.40 (0.54–3.62)	0.49		
Biologics	0.95 (0.33–2.73)	0.92	1.29 (0.41–4.01)	0.66		

[a] Based on 128 patients with complete covariate information at each clinic visit (43 progressed to polyarthritis). APR: acute-phase reactant; DMARD: disease-modifying antirheumatic drug; HAQ-DI: Health Assessment Questionnaire–Disability Index; LE: lower extremity; LJ: large joint; MCS: mental component summary score; NSAID: nonsteroidal antiinflammatory drugs; PASI: Psoriasis Area Severity Index; PCS: physical component summary score; PsA: psoriatic arthritis; SF-36: 36-item Short Form Health Survey; SJ: small joint; UE: upper extremity.

We included 407 patients with early disease who entered our clinic within 12 months of diagnosis. Of the 407 patients, 192 (47%) presented with oligoarthritis based on inflamed joints only. There was no difference in disease duration between those who presented with polyarticular and oligoarticular disease with a mean of < 6 months of disease duration. Indeed, there were no differences in demographic and clinical features between the 2 groups, aside from the expected difference of the total number of actively inflamed or involved joints as well as the presence of dactylitis and enthesitis. A similar proportion of patients were treated with biologic therapy. Similar observations were noted when the definition of oligoarthritis was based on the number of involved joints, including both inflamed and damaged joints. Of note, the most commonly affected joints even among patients with oligoarticular disease were the small joints of the hands. This is different from the concept that oligoarticular disease tends to involve large joints in the lower extremities.

A study from the Dutch south-west Early Psoriatic Arthritis cohort (DEPAR), an early PsA cohort with an average of 11 months since the onset of symptoms at the time of diagnosis, documented that 56% of the patients had oligoarthritis at diagnosis.[18]

Clearly, some patients who presented with oligoarthritis progress to develop polyarticular disease. Jones, *et al* described outcomes in a disease subset of 100 patients with PsA.[19] Although 63% of the patients presented with monoarthritis or oligoarthritis, the majority (64%) progressed to polyarthritis over time. In this study, patients who presented with oligoarticular disease had a lower mean disease duration of PsA (6.6 yrs) compared to those who presented with polyarticular disease (13.9 yrs, $P = 0.007$). The authors concluded that the mode of onset did not predict outcome. In an early PsA study from Dublin, Kane, *et al*[20] reported that 40% of the patients had oligoarticular PsA, whereas 60% had polyarticular disease. However, at the follow-up, 39% of the patients became oligoarticular following treatment. They also concluded that using the pattern of disease to classify patients with PsA may be inappropriate. The frequency of oligoarthritis in this study (39%) was similar to the frequency of oligoarthritis at presentation in our study (47%).

In our study, among 192 inception patients who presented with oligoarthritis, 39% progressed to polyarticular disease. When patients with dactylitis, enthesitis, and axial disease were not included in the model, upper extremity small joints predicted progression, whereas better physical function protected from progression. However, when the clinical features were added to the model, the only predictor for the evolution to active polyarticular disease was the presence of a lower SF-36 MCS score, suggesting worse mental function. It is not clear why some patients do not progress to polyarthritis. It is possible that treatment may have halted progression to polyarthritis, although the analysis did not reveal that medications played a role. Coates, *et al* demonstrated that patients with oligoarticular disease who participated in the Tight Control of Psoriatic Arthritis (TICOPA) trial had significant differences between the tight control and standard of therapy groups, although the statistical

significance was lower than that shown for the whole group of participants.[21] This study demonstrated that tight control works for oligoarticular as well as polyarticular disease.

Moreover, previous studies using ultrasound showed that oligoarticular patients were reclassified as polyarticular due to subclinical synovitis/disease.[22] Indeed, in our study, when we included all joints involved—including those that had been damaged—the number of patients with oligoarthritis was reduced.

In conclusion, oligoarticular PsA is similar to polyarticular disease. Lower extremity small joint involvement is associated with polyarticular presentation, but small joint involvement is associated with progression to polyarticular disease.

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