OLIGOARTICULAR VERSUS POLYARTICULAR PSORIATIC ARTHRITIS: A LONGITUDINAL STUDY SHOWING SIMILAR CHARACTERISTICS

Running Title: **OLIGOARTICULAR PSA**

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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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 identify potential predictors for evolution of oligoarthritis to polyarthritis in patients with 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: 192 of 407 (47%) patients presented with oligoarthritis. While 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 HAQ and lower SF-36 scores. 117 of 192 oligoarticular patients (61%) remained oligoarticular and 75 (39%) progressed to polyarthritis. Lower SF-36 mental component summary score was the predictor for progressing to polyarthritis.

Conclusions: Oligoarticular PsA occurs in 39% 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 a lower SF-36 mental health component.

INTRODUCTION

In Moll and Wright's original description of psoriatic arthritis (PsA), the authors identified oligoarticular disease, defined as 4 or less 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 either 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 while others required only 3 tender and swollen joints. However, even the latter trials had an average of 20 tender and 15 swollen joints, in some jurisdictions, patients with oligoarticular disease (less than 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: 1) To determine whether patients with oligoarticular presentation differ from those with polyarticular presentation in terms of demographics, clinical

characteristics and treatment. 2) To identify potential predictors for evolution of oligoarthritis to polyarthritis in patients with PsA.

MATERIALS AND METHODS

Setting

The study was conducted at the University of Toronto Psoriatic Arthritis Program where patients have been followed prospectively since 1978. Patients consented to this study which was ethically approved by the University Health Network Research Ethics Board (REB No. 08-0630-AE), and agreed to publish 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 two clinic visits were included.

Patient Assessments

Patients were followed according to a standard protocol at 6- to 12-month intervals. Demographics, clinical history, detailed clinical examination (including a 68 tender, 66 swollen joint counts which has been consistent since the initiation of the clinic, and laboratory information were collected at each scheduled clinic visit and radiographs were performed at 2-year intervals. These patients had completed patient reported outcomes including the Health Assessment Questionnaire (HAQ) and the Short Form-36 (SF-36), annually. The information was recorded in a computerized database (10,11). Patient assessments in the clinic have been carried out in a uniform way as the directors instruct the physicians participating in patient care within the clinic on how to assess the patients. These assessments have been demonstrated to be reliable (12,13).

Definition of Outcomes

Two definitions of oligoarthritis were used. Firstly, oligoarthritis was defined based on the presence of ≤ 4 inflamed (tender and/or swollen) joints (of a total of 68 tender, 66 swollen recorded for each patient). Tender and/or swollen joints are considered inflamed. We have demonstrated that patients with PsA, unlike RA, may have inflammatory changes on MRI even if the joint is just tender and not swollen (14). Since PsA patients may have had inflamed joints prior to entry to clinic but may have developed damage as a consequence of previous inflammation (15,16), we also used a definition on < 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 versus oligoarthritis. Odds ratios, 95% confidence intervals 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). Hazard ratios, 95% confidence intervals 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-value < 0.05. Descriptive statistics were computed, and logistic regression models were fitted using SAS 9.4 and Weibull regression models were fitted using TIBCO SpotFire S+ Version 8.2.0.

RESULTS

Four hundred and seven patients were included in the analyses. Of those, 192 (47%) presented with oligoarthritis and 215 (53%) with polyarthritis. Demographic features were similar between the two 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 two 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 and mental component summary 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 odds ratios for presentation with polyarthritis, but it should be noted that the confidence intervals 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 odds ratios for presentation with polyarthritis, albeit with wide confidence intervals. 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, PASI score, elevated acute phase reactant, or medication use.

Of the 192 patients who were presented with oligoarthritis, 117 (61%) remained oligoarticular and 75 (39%) evolved into polyarticular disease. We developed two 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 while 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 oligoarthritis defined based on involved (inflamed and/or damaged) joints, the number of patients with oligoarthritis reduced to 185 with 39.5% evolved into polyarticular disease, as some patients had evidence of damage which 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**).**

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).

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 those presenting with oligoarticular disease with a mean of less than 6 months of disease duration.

Indeed, there were no differences in demographic and clinical features between the two 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 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 years) compared to those who presented with polyarticular disease (13.9 years, 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 while 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 to 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.

CONCLUSION

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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Table 1: PATIENT CHARACTERISTICS AT BASELINE

Variable	Based on active* joints		Based on involved** joints	
	Oligoarthritis	Polyarthritis	Oligoarthritis	Polyarthritis
Number of patients	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 (yrs.)	29.1 (14.6)	31.4 (16.1)	28.6 (14.4)	31.7 (16.0)
Age at PsA (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%
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%

*Active joints – tender and/or swollen joints; **Involved joints - active and/or damaged joints. BMI-body mass index; PASI-psoriasis area severity index; actively inflamed joints-tender and/or swollen joints; UE-upper extremity; SJ-small joints; LJ- large joints; LE-lower extremity; HAQ - health assessment questionnaire; SF-36 PCS – SF-36 physical component score; ; SF-36 MCS - SF-36 mental component score; NSAIDs-non-steroidal anti-inflammatory drugs; DMARDs-disease modifying anti-rheumatic drugs

Table 2: FEATURES ASSOCIATED WITH PRESENTING WITH POLYARTHRITIS VS OLIGOARTHRITIS BASED ON ALL PATIENTS*

			Multivariate Analysis			
	Univariate Analysis		Full Model		Reduced Model	
Covariate	OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value
Age			1.02 (0.99, 1.04)	0.20	1.02 (0.99, 1.04)	0.13
PsA duration			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		

*Based on 407 patients with only the covariate information available at baseline clinic visit (215 with polyarthritis, 192 with oligoarthritis). LE - lower extremity; UE - upper extremity; SJ-small joints; LJ-large joints; PASI – psoriasis area severity index; NSAIDs – nonsteroidal anti-inflammatory drugs; DMARDs – Disease modifying anti-rheumatic drugs.

Table 3: FEATURES ASSOCIATED WITH PRESENTING WITH POLYARTHRITIS VS OLIGOARTHRITIS BASED ON 228 PATIENTS*

			Multivariate Analysis			
	Univariate Analysis		Full Model		Reduced Model	
Covariate	OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value
Age			0.99 (0.96, 1.03)	0.63	0.99 (0.96, 1.02)	0.54
PsA duration			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		
↑ 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		

*Based on 228 patients with complete covariate information at baseline clinic visit (126 with polyarthritis, 102 with oligoarthritis). LE - lower extremity; UE - upper extremity; SJ-small joints; LJ-large joints; HAQ- health assessment questionnaire; SF-36 PCS – SF-36 physical component score; ; SF-36 MCS - SF-36 mental component score; PASI – psoriasis area severity index; ↑ APR - elevated acute phase reactant; NSAIDs – nonsteroidal anti-inflammatory drugs; DMARDs – Disease modifying anti-rheumatic drugs.

Table 4: FEATURES ASSOCIATED WITH PROGRESSION FROM OLIGOARTHRITIS TO POLYARTHRITIS BASED ON 136 PATIENTS (EXCLUDING DACTYLITIS, ENTHESITIS AND AXIAL DISEASE) *

			Multivariate Analysis			
	Univariate Analysis		Full Model		Reduced Model	
Covariate	HR (95% CI)	P value	HR (95% CI)	P value	HR (95% CI)	P value
Age			1.00 (0.98, 1.04)	0.57	1.01 (0.99, 1.04)	0.30
PsA duration			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	.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		
↑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		

*Based on 136 patients with only the covariate information available at each clinic visit (46 progressed to polyarthritis). LE - lower extremity; UE - upper extremity; SJ-small joints; LJ-large joints; HAQ- health assessment questionnaire; SF-36 PCS – SF-36 physical component score; SF-36 MCS - SF-36 mental component score; PASI – psoriasis area severity index; ↑ APR - elevated acute phase reactant; NSAIDs – nonsteroidal anti-inflammatory drugs; DMARDs – Disease modifying anti-rheumatic drugs.

Table 5: FEATURES ASSOCIATED WITH PROGRESSION FROM OLIGOARTHRITIS TO POLYARTHRITIS BASED ON 128 PATIENTS (INCLUDING DACTYLITIS, ENTHESITIS AND AXIAL DISEASE)*

			Multivariate Analysis			
	Univariate Analysis		Full Model		Reduced Model	
Covariate	HR (95% CI)	P value	HR (95% CI)	P value	HR (95% CI)	P value
Age			1.01 (0.98, 1.04)	0.35	1.02 (0.99, 1.04)	0.18
PsA duration			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
↑ 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		

* Based on 128 patients with complete covariate information at each clinic visit (43 progressed to polyarthritis). LE - lower extremity; UE - upper extremity; SJ-small joints; LJ-large joints; HAQ- health assessment questionnaire; SF-36 PCS – SF-36 physical component score; SF-36 MCS - SF-36 mental component score; PASI – psoriasis area severity index; ↑ APR = elevated acute phase reactant; NSAIDs – nonsteroidal anti-inflammatory drugs; DMARDs – Disease modifying anti-rheumatic drugs.