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Clinical Characteristics of Patients With Psoriatic Spondylitis Versus Those With Ankylosing Spondylitis: Features at Baseline Before Biologic Therapy

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ABSTRACT

Background: Clinical characteristics and manifestations of psoriatic arthritis (PsA) have been extensively studied in western countries, yet data of Korean patients with PsA are very limited. We aimed to investigate the clinical traits of patients with PsA and dissect the characteristics of those with axial involvement.
Methods: In this observational study, we analyzed clinical data of 109 patients with PsA who were enrolled in the Korean College of Rheumatology Biologics and Targeted Therapy registry between December 2012 and March 2022 at the time point of initiating or switching to a biologic agent. Data from 2,221 patients with ankylosing spondylitis (AS) registered during the same period were also analyzed. We divided patients with PsA into patients with or without axial involvement and then added AS patients with psoriasis (total three subgroups) for comparative analyses.
Results: Asymmetric oligoarthritis was the most common clinical manifestation in patients with PsA, followed by symmetric polyarthritis and spondylitis. Our analysis indicated that methotrexate and sulfasalazine were the two most prescribed disease-modifying antirheumatic drugs for patients with PsA before starting biologic therapy. The patients with psoriatic spondylitis had more peripheral joint involvement ($P = 0.016$), less prior uveitis ($P < 0.001$), and lower human leukocyte antigen B27 (HLA-B27) positivity ($P < 0.001$) than the AS patients with psoriasis. Furthermore, syndesmophytes and radiographic sacroiliitis were prevalent among patients with PsA and AS patients with psoriasis who had the HLA-B27 gene.
Conclusion: Our study shows that the degree of peripheral arthritis is less severe in Korean patients with PsA who require biologics and reestablishes that psoriatic spondylitis is a common and important clinical pattern in Korean patients with PsA.

Trial Registration: ClinicalTrials.gov Identifier: NCT01965132

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Disclosure
The authors have no potential conflicts of interest to disclose.

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Keywords: Psoriatic Arthritis; Clinical Characteristics; Psoriatic Spondylitis; Ankylosing Spondylitis; Human Leukocyte Antigen B27; Disease-modifying Antirheumatic Drug

INTRODUCTION

Psoriatic arthritis (PsA), a subset of spondyloarthritis (SpA), is a chronic inflammatory disease that is generally preceded by psoriasis, and its prevalence is around 6–42% among patients with psoriasis in Western countries.[1,2] The clinical patterns of PsA could be in the form of asymmetric oligoarthritis, symmetric polyarthritis, distal interphalangeal involvement, mutilating arthritis, and spondylitis.[3] It can also present with various extra-articular manifestations, such as uveitis.

Studies in Asian countries have shown lower prevalence rates than those from Western countries: 1–13.7% among patients with psoriasis.[4-7] Two Korean studies have indicated the prevalence of PsA as 9.0–11.2% among patients with psoriasis, and the most common clinical pattern was spondylitis.[8,9] In a study comprising 32 Korean patients with PsA, nail change, dactylitis, and enthesopathy were observed in 36%, 15.4%, and 15.6% patients, respectively.[8] They also showed that human leukocyte antigen B27 (HLA-B27) was present in 8% of patients with PsA. However, this was a cross-sectional study from a single center.

Several countries have established national registries that include initial and follow-up data on patients with PsA treated with biologic drugs.[10-12] The Korean College of Rheumatology Biologics and Targeted Therapy (KOBIO) registry is a large, prospective, observational, disease-based registry initiated in December 2012 that includes data on patients with rheumatoid arthritis (RA), ankylosing spondylitis (AS), and PsA who were initiated on or switched to biologics or targeted synthetic disease-modifying antirheumatic drugs (DMARDs).[13] The registry data can provide information on the characteristics and comorbidities of patients in real-world clinical practice.

Though the clinical characteristics and manifestations of PsA have been extensively studied in Western countries, clinical data on Korean patients with PsA are scarce. The aim of this study was to investigate the clinical characteristics of patients with PsA enrolled in a nationwide registry at the time point of initiating or switching to a biologic agent. Furthermore, we intended to dissect the clinical and radiological characteristics of patients with PsA with axial involvement.

METHODS

Patients and data collection

This was an observational study using clinical data of patients with PsA registered in the KOBIO registry between December 2012 and March 2022 (Clinicaltrials.gov NCT01965132).[13] Patients were eligible for the study if they met the classification criteria for PsA (CASPAR).[14] Data of patients with AS were also obtained; patients fulfilled the 1984 modified New York criteria for the diagnosis of AS.[15] In South Korea, to obtain a reimbursement of biologic therapy for PsA, patients should have an inadequate response to at least two conventional synthetic DMARDs (csDMARDs) despite treatment for > 6 months. For AS, patients should have an inadequate response to at least two non-steroidal anti-inflammatory drugs or a

csDMARD despite treatment for > 3 months. Patients older than 18 years who were started on or switched to other biologics were registered. Patients were enrolled in the registry by rheumatologists, and questionnaires were completed during patient visits as part of routine clinical care. As the Korean National Health Insurance reimburses the cost of biologic DMARDs for patients with PsA who failed to receive relief from at least two conventional DMARDs for 6 months, the registry preferentially included patients with a moderate to severe disease activity. Standardized protocols for patient enrollment and data quality control were monitored by all the participating centers.

Subgroup of study patients

Clinical, laboratory, and imaging data of 109 patients with PsA were obtained. We also acquired data of 2,221 patients with AS who were enrolled during the same period. Patients with PsA were divided into those without spondylitis and those with psoriatic spondylitis defined by the designated clinical pattern registered by the rheumatologist; AS patients with psoriasis were included as a comparator group. Lastly, patients with PsA and AS plus psoriasis were grouped together and then stratified according to their HLA-B27 status.

Statistical analysis

Baseline data at the time of enrollment were used for the analysis. Either the independent Student's *t*-test or Mann-Whitney *U* test was used for continuous variables, and the χ^2 test was used for categorical variables. The Kruskal-Wallis test was used for comparing variables among groups. *P* values of the multiple comparison tests were generated using the Bonferroni correction. All statistical analyses were two-sided and were performed using the SAS statistical software version 9.4 (SAS Institute Inc., Cary, NC, USA). Statistical significance was set at $P < 0.05$.

Ethics statement

The KOBIO registry project was approved by the Institutional Review Board (IRB) of each hospital. The current study protocol was approved by the IRB of Ajou University Hospital (No. AJIRB-MED-MDB-22-146). All procedures were conducted in accordance with principles of the Declaration of Helsinki and good clinical practice guidelines, and all patients provided written informed consent to participate in the development of the registry.

RESULTS

Clinical findings in patients with PsA and comparison of clinical characteristics between patients with PsA and AS

Table 1 shows the clinical characteristics and laboratory findings of 109 patients with PsA and 2,221 patients with AS. The age (mean ± standard deviation) of patients with PsA was 48 ± 11.6 years, and 53.2% were men. Disease duration was 4.4 ± 5.4 years. Among the 109 patients, the most common pattern of PsA was asymmetric oligoarthritis (47.7%), followed by symmetric polyarthritis (40.4%), spondylitis (24.8%), distal interphalangeal involvement (23.9%), and mutilating arthritis (2.8%). The Leeds Enthesitis Index was 0.28 ± 0.67, and the patient global assessment score was 5.56 ± 2.34. The CASPAR score was 3.60 ± 0.96. There was no significant difference in disease duration between patients with PsA and those with AS. HLA-B27 positivity was significantly lower ($P < 0.001$) in patients with PsA (n = 11, 15.9%) than in those with AS (n = 1,843, 89.2%). Peripheral joint involvement was significantly higher ($P < 0.001$) in patients with PsA (n = 90, 82.6%) than in those with AS (n = 637, 29%).

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Table 1. Clinical characteristics and laboratory findings of patients with PsA and AS

Characteristics	PsA (n = 109)	AS (n = 2,221)	*P* value
Age, yr	48.0 ± 11.6	39.2 ± 13.3	< 0.001
Sex, male	58 (53.2)	1,688 (76.0)	< 0.001
Disease duration, yr	4.4 ± 5.4	5.0 ± 6.3	0.232
Body mass index	25.0 ± 4.3	23.7 ± 3.6	0.003
Previous or current smoker	55 (50.5)	1,100 (49.5)	0.849
Education, yr	13.9 ± 3.1	14.1 ± 2.8	0.664
HLA-B27	11 (15.9)	1,843 (89.2)	< 0.001
DAS28-ESR	3.88 ± 1.33	-	-
DAS28-CRP	3.53 ± 1.13	-	-
ASDAS-ESR	-	3.71 ± 1.05	-
ASDAS-CRP	-	3.59 ± 1.05	-
ESR	26.4 ± 25.3	37.2 ± 30.0	< 0.001
CRP	1.31 ± 2.55	2.08 ± 2.81	0.005
Peripheral joint involvement	90 (82.6)	637 (29.0)	< 0.001
Tender joint count	5.31 ± 4.96	0.91 ± 2.59	< 0.001
Swollen joint count	3.87 ± 3.71	0.59 ± 2.21	< 0.001
PsA classification (main feature)			
Asymmetric oligoarthritis	52 (47.7)	-	-
Symmetric polyarthritis	44 (40.4)	-	-
Distal arthritis	26 (23.9)	-	-
Mutilating arthritis	3 (2.8)	-	-
Spondylitis	27 (24.8)	-	-
Total CASPAR score	3.60 ± 0.96	-	-
Uveitis	0 (0.0)	498 (22.8)	< 0.001
Enthesitis	20 (19.1)	455 (20.8)	0.671
Dactylitis	47 (43.5)	42 (1.9)	< 0.001
SAPHO syndrome	6 (5.7)	-	-
Leeds Enthesitis Index	0.28 ± 0.67	-	-
Patient global assessment score	5.56 ± 2.34	6.32 ± 2.08	< 0.001

All values are presented as numbers with corresponding percentages in parentheses or as mean ± standard deviation.
PsA = psoriatic arthritis, AS = ankylosing spondylitis, HLA-B27 = human leukocyte antigen B27, DAS28-ESR = disease activity score 28-erythrocyte sedimentation rate, DAS28-CRP = disease activity score 28-C-reactive protein, ASDAS-ESR = ankylosing spondylitis disease activity score-erythrocyte sedimentation rate, ASDAS-CRP = ankylosing spondylitis disease activity score-C-reactive protein, ESR = erythrocyte sedimentation rate, CRP = C-reactive protein, CASPAR = classification criteria for psoriatic arthritis, SAPHO = synovitis, acne, pustulosis, hyperostosis, and osteitis.

Additionally, the numbers of tender and swollen joints were both significantly higher (P < 0.001) in patients with PsA than in those with AS. Furthermore, dactylitis was significantly more common (P < 0.001) in patients with PsA (n = 47, 43.5%) than in those with AS (n = 42, 1.9%). Six patients in the PsA group had synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO) syndrome.

In patients with PsA, the combined comorbidities (**Table 2**) in a descending order of frequency were hyperlipidemia (n = 39, 35.8%), hypertension (n = 32, 29.4%), anemia (n = 17, 15.6%), obesity (n = 11, 10.1%), and osteoporosis (n = 10, 9.2%). In patients with AS, anemia was the most common comorbidity (n = 471, 21.2%), followed by hypertension (n = 360, 16.2%), hyperlipidemia (n = 318, 14.3%), and obesity (n = 117, 5.3%).

The most prescribed DMARDs in patients with PsA (**Table 3**) prior to initiation of biologics were methotrexate (90.8%), sulfasalazine (70.6%), leflunomide (18.4%), and cyclosporine (18.4%). The most prescribed biologic agent at enrollment was adalimumab or its biosimilars (n = 44, 40.4%), followed by etanercept or its biosimilars (n = 21, 19.3%), golimumab (n = 15, 13.8%), and secukinumab (n = 14, 12.8%). In patients with AS, the commonly prescribed DMARDs prior to initiation of biologics were sulfasalazine (n = 1,683, 75.8%), methotrexate (n = 556, 25%), and leflunomide (n = 65, 2.9%). The commonly prescribed biologics for

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Table 2. Comorbidities of patients with PsA and AS

Comorbidities	PsA (n = 109)	AS (n = 2,221)	*P* value
Hypertension	32 (29.4)	360 (16.2)	< 0.001
Ischemic heart disease	3 (2.8)	32 (1.4)	0.223
Hyperlipidemia	39 (35.8)	318 (14.3)	< 0.001
Congestive heart failure	0 (0.0)	3 (0.1)	-
Cardiac arrhythmia	2 (1.8)	20 (0.9)	0.275
Peripheral vascular disorder	0 (0.0)	4 (0.2)	-
Stroke	0 (0.0)	3 (0.1)	-
Headache	1 (0.9)	25 (1.1)	-
Migraine	1 (0.9)	33 (1.5)	-
Other neurological disorder	0 (0.0)	12 (0.5)	-
Restrictive/Interstitial lung disease	1 (0.9)	4 (0.2)	0.213
Chronic obstructive pulmonary disease	0 (0.0)	10 (0.5)	-
Asthma	1 (0.9)	20 (0.9)	-
Osteoporosis	10 (9.2)	101 (4.6)	0.027
Diabetes without complications	9 (8.3)	93 (4.2)	0.053
Diabetes with complications	5 (4.6)	14 (0.6)	0.001
Hyperthyroidism	2 (1.8)	9 (0.4)	0.092
Hypothyroidism	3 (2.8)	19 (0.9)	0.080
Obesity	11 (10.1)	117 (5.3)	0.031
Weight loss	0 (0.0)	10 (0.5)	-
Renal failure	2 (1.8)	18 (0.8)	0.240
Fluid and electrolyte disorder	0 (0.0)	1 (0.1)	-
Peptic ulcer	0 (0.0)	38 (1.7)	0.258
Liver disease	8 (7.3)	45 (2.0)	0.003
Tuberculosis	0 (0.0)	5 (0.2)	-
Hepatitis B infection	0 (0.0)	34 (1.5)	0.405
Hepatitis C infection	0 (0.0)	5 (0.2)	-
Alcohol use disorder	0 (0.0)	9 (0.4)	-
Psychosis	1 (0.9)	8 (0.4)	0.059
Anemia	17 (15.6)	471 (21.2)	0.352
Solid tumor without metastasis	1 (0.9)	23 (1.0)	0.160
Metastatic cancer	0 (0.0)	2 (0.09)	-

All values are presented as numbers with corresponding percentages in parentheses.
PsA = psoriatic arthritis, AS = ankylosing spondylitis.

Table 3. Medications before biologics and the biologics prescribed to patients with PsA and AS

Characteristics	PsA (n = 109)	AS (n = 2,221)	*P* value
DMARD prescribed at least once before initiation of biologics			
Methotrexate	99 (90.8)	556 (25.0)	< 0.001
Hydroxychloroquine	15 (13.8)	57 (2.6)	< 0.001
Sulfasalazine	77 (70.6)	1,683 (75.8)	0.223
Leflunomide	20 (18.4)	65 (2.9)	< 0.001
Cyclosporine	20 (18.4)	14 (0.6)	< 0.001
Corticosteroid use before initiation of biologics	55 (50.5)	-	
Starting biologic agent			< 0.001
Etanercept or etanercept biosimilars	21 (19.3)	393 (17.7)	
Infliximab or infliximab biosimilars	12 (11.0)	465 (20.9)	
Adalimumab or adalimumab biosimilars	44 (40.4)	875 (39.4)	
Golimumab	15 (13.8)	446 (20.1)	
Ustekinumab	1 (0.9)	0 (0.0)	
Secukinumab	14 (12.8)	36 (1.6)	
Ixekizumab	2 (1.8)	6 (0.3)	
First-line vs. Second- or higher-line biologics			0.110
First-line	78 (71.6)	1734 (78.1)	
Second- or higher-line	31 (28.4)	487 (21.9)	
Concomitant DMARD use	90 (82.6)	308 (13.9)	< 0.001

All values are presented as numbers with corresponding percentages in parentheses.
PsA = psoriatic arthritis, AS = ankylosing spondylitis, DMARD = disease-modifying antirheumatic drugs.

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the treatment of AS at enrollment were adalimumab or its biosimilars (n = 875, 39.4%), infliximab or its biosimilars (n = 465, 20.9%), golimumab (n = 446, 20.1%), and etanercept or its biosimilars (n = 393, 17.7%).

Comparison of clinical characteristics among patients with PsA with or without axial involvement

We compared the clinical characteristics of PsA patients with or without axial involvement: patients with PsA without spondylitis (n = 82, group 1), with psoriatic spondylitis (n = 27, group 2), and as a comparator group, patients with AS with psoriasis (n = 78, group 3) (**Table 4**). The patients in group 1 (age: 48.8 ± 12 years) were significantly older ($P < 0.001$) than those in groups 2 (age: 45.3 ± 10.3 years) and 3 (age: 40.8 ± 11.1 years). There were no significant differences between the body mass index and smoking status of patients in the groups. HLA-B27 was positive in 14%, 21.1%, and 76% of patients in groups 1, 2, and 3, respectively. Peripheral joint involvement was significantly ($P < 0.001$) more common in group 1 (n = 73, 89%) than in groups 2 (n = 17, 63%) and 3 (n = 26, 33.8%). There was no significant difference in the incidence of enthesitis between the groups. Significantly fewer syndesmophytes ($P < 0.001$) were observed in group 1 (n = 2, 4.1%) than in groups 2 (n = 6, 25%) and 3 (n = 29, 38.8%).

Furthermore, we combined the three groups and then divided them into two subgroups according to their HLA-B27 status (**Supplementary Table 1**). The age of patients who were HLA-B27 positive (+) and HLA-B27 negative (−) was similar (42.2 ± 11.7 vs. 44.7 ± 11.0 years; $P = 0.198$). Disease duration was significantly longer in HLA-B27 (+) patients than in HLA-B27

Table 4. Clinical characteristics of patients with PsA without spondylitis and with psoriatic spondylitis and patients with AS with psoriasis

Characteristics	Group 1: PsA without spondylitis (n = 82)	Group 2: Psoriatic spondylitis (n = 27)	Group 3: AS with psoriasis (n = 78)	*P* value	*Post hoc* analysis		
					1 vs. 2	2 vs. 3	1 vs. 3
Age, yr	48.8 ± 12.0	45.3 ± 10.3	40.0 ± 11.1	< 0.001	0.795	0.358	< 0.001
Sex, male	43 (52.4)	15 (55.6)	61 (78.2)	0.002	1.000	0.047	0.001
Disease duration, yr	4.2 ± 5.1	4.8 ± 6.2	5.2 ± 6.3	0.897	1.000	1.000	1.000
Body mass index	24.9 ± 4.1	25.4 ± 5.0	24.7 ± 4.6	0.888	1.000	1.000	1.000
Previous or current smoker	41 (50.0)	14 (51.9)	48 (61.5)	0.319	1.000	0.755	0.284
Education, yr	14 ± 3.2	13.9 ± 2.8	14.2 ± 2.8	0.752	1.000	1.000	1.000
CASPAR total score	3.65 ± 0.95	3.44 ± 1.01	-	0.122	-	-	-
ESR	23.6 ± 23.2	34.8 ± 29.7	32.8 ± 31.2	0.061	0.251	1.000	0.256
CRP	1.00 ± 1.93	2.23 ± 3.77	1.71 ± 3.19	0.026	0.201	1.000	0.097
HLA-B27	7 (14.0)	4 (21.1)	57 (76.0)	< 0.001	0.960	< 0.001	< 0.001
Peripheral joint involvement	73 (89.0)	17 (63.0)	26 (33.8)	< 0.001	0.012	0.016	< 0.001
Tender joint count	5.89 ± 4.88	3.56 ± 4.89	1.91 ± 5.97	< 0.001	0.025	0.049	< 0.001
Swollen joint count	4.22 ± 3.52	2.81 ± 4.15	0.75 ± 2.75	< 0.001	0.045	0.001	< 0.001
Leeds Enthesitis Index	0.33 ± 0.69	0.15 ± 0.60	-	0.107	-	-	-
Uveitis	0 (0.0)	0 (0.0)	24 (32.4)	< 0.001	-	< 0.001	< 0.001
Enthesitis	18 (23.1)	2 (7.4)	14 (18.2)	0.196	0.148	0.458	0.903
Dactylitis	38 (46.9)	9 (33.3)	4 (5.2)	< 0.001	0.435	0.001	< 0.001
SAPHO syndrome	2 (2.6)	4 (14.8)	-	0.037	-	-	-
RAPID3	12.53 ± 5.75	11.40 ± 6.82	-	0.401	-	-	-
PGA score	5.79 ± 2.19	4.85 ± 2.64	6.55 ± 2.20	0.003	0.493	0.018	0.061
SI joint involvement							
Radiographic	51 (62.2)	25 (92.6)	78 (100.0)	< 0.001	0.006	0.129	< 0.001
Non-radiographic	31 (37.8)	2 (7.4)	0 (0.0)				
Syndesmophytes	2 (4.1)	6 (25.0)	29 (38.8)	< 0.001	0.026	0.446	< 0.001

All values are presented as numbers with corresponding percentages in parentheses.
PsA = psoriatic arthritis, AS = ankylosing spondylitis, CASPAR = classification criteria for psoriatic arthritis, ESR = erythrocyte sedimentation rate, CRP = C-reactive protein, HLA-B27 = human leukocyte antigen B27, SAPHO = synovitis, acne, pustulosis, hyperostosis, and osteitis, RAPID3 = routine assessment of patient index data 3, PGA = patient global assessment, SI = sacroiliac.

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(−) patients (5.8 ± 6.6 vs. 3.6 ± 5.4 years; $P = 0.024$). Erythrocyte sedimentation rate was significantly higher in HLA-B27 (+) patients than in HLA-B27 (−) patients (37.8 ± 34.5 vs. 22.8 ± 20.3 mm/h; $P = 0.002$). On the other hand, peripheral joint involvement was significantly more common ($P < 0.001$) in HLA-B27 (−) patients (n = 56, 74.7%) than in HLA-B27 (+) patients (n = 25, 36.8%). Although dactylitis was significantly more common ($P < 0.001$) in HLA-B27 (−) patients (n = 28, 37.8%) than in HLA-B27 (+) patients (n = 5, 7.4%), the incidence of enthesitis was comparable between the two subgroups. Radiographic sacroiliitis ($P < 0.001$) and syndesmophytes ($P < 0.001$) were significantly more frequent in HLA-B27 (+) patients.

DISCUSSION

This study described the distinct clinical features, comorbidities, and medication history of 109 Korean patients with PsA by comparing their characteristics with those of patients with AS. Furthermore, the clinical characteristics of patients with PsA with or without spondylitis were also compared. Despite the fact that patients with PsA needed biologics mainly to control peripheral arthritis, we verified that spondylitis is indeed a common pattern in Korean patients with PsA.

The most common manifestation of joint involvement in PsA has been different in various reports.[8,16-21] Some studies have indicated that oligoarthritis, occurring in 37–67% of patients with PsA, is the most common arthropathy in PsA.[20,21] However, recent studies have shown that polyarthritis is the most common manifestation.[16,18] One study reported that polyarthritis (38.9%) was more frequent than other manifestations, and its detection rate was higher because of a longer duration of follow-up in the polyarticular group.[18] Studies conducted in South Korea showed that spondylitis was the most common clinical pattern of PsA.[8,9] A recent study suggested that racial differences may be associated with the clinical manifestation patterns of PsA.[9] In our study, the most common pattern was asymmetric oligoarthritis, which was present in 47.7% of patients. This was followed by symmetric polyarthritis (40.4%), spondylitis (24.8%), distal interphalangeal involvement (23.9%), and mutilating arthritis (2.8%). This result is consistent with the results of some studies[16,18,19] but inconsistent with those of previous studies from South Korea.[8,9] This discrepancy could be attributed to dissimilar disease activities of enrolled patients, disease duration, and study methods. As our study used data from the KOBIO-PsA registry, patients tended to have a higher disease activity and shorter disease duration.

Recent studies showed that over half of the patients with PsA have more than one comorbidity, which has a significant impact on their quality of life.[22-24] In addition, some studies have revealed that similar to patients with RA, patients with PsA have a higher prevalence and incidence of cardiovascular diseases, such as ischemic heart disease and stroke, than the general population.[24,25] In our study, the comorbidities related to the risk of cardiovascular diseases in patients with PsA were hypertension (29.4%), diabetes mellitus (12.8%), and hyperlipidemia (35.8%). The rates are somewhat higher than those of patients with AS possibly because patients with PsA were older than those with AS. When these results were compared to those of a study of Korean patients with PsA, the prevalence of risk factors was comparable; hypertension (33.4%), diabetes mellitus (16.2%), and hyperlipidemia (14.9%).[26] However, we were unable to compare the prevalence of comorbidities in patients with PsA vs. the general population. Furthermore, the mean disease duration of our patients with PsA was relatively shorter than that reported in previous studies.[27,28]

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Despite the fact that meta-analysis studies have shown that conventional DMARDs have an inadequate efficacy for treating PsA, they are still the most prescribed class of drugs for treating PsA.[29] Methotrexate, sulfasalazine, and leflunomide are the commonly prescribed conventional DMARDs, especially for peripheral arthritis.[30] Systemic glucocorticoids are not recommended for treating PsA because they could cause post-steroid flares of psoriasis. Various studies have revealed the efficacy of several biologics, such as anti-tumor necrosis factor agents or secukinumab, in treating patients with PsA who were refractory to conventional DMARDs.[29,30] Our study showed that the drugs most commonly used before biologics were methotrexate (90.8%) and sulfasalazine (70.6%). Fifty-five (50.5%) patients were still being treated with oral glucocorticoids in real-world practice. Peripheral joint involvement was observed in 82.6% of patients. However, the numbers of tender and swollen joints were lower than those reported in previous studies based on nationwide registries.[10,11] Our patients had a mean disease duration of 4.37 years at the time of initiation of or switching to biologics. Several biologics, including etanercept, adalimumab, infliximab, golimumab, and secukinumab, were used at a relatively even ratio in patients with PsA, although the most common biologic was adalimumab or its biosimilars. The number of users of ustekinumab, which is an interleukin (IL)-12/IL-23 inhibitor, was relatively small. Notably, most of the patients (82.6%) were treated with a conventional DMARD in addition to biologics.

PsA is a key subset of SpA that could have or incidentally be found to have axial involvement.[14,31] In patients with PsA predominantly having axial symptoms, inflammatory back pain and stiffness can be similar to the degree observed in patients with AS.[32] A recent study showed that the presence of axial involvement was associated with a higher likelihood of moderate or severe skin lesions, higher disease activity, and greater effect on the quality of life.[33] As only a subgroup of patients with PsA had axial involvement, we evaluated the clinical characteristics of patients with psoriatic spondylitis and those with AS. Consistent with previous reports, our study demonstrated that patients with psoriatic spondylitis had more peripheral joint involvement and a lower rate of HLA-B27 positivity and prior uveitis than AS patients with psoriasis.[21,34,35] We also found that HLA-B27 (+) patients had a higher erythrocyte sedimentation rate and less frequent peripheral joint involvement and dactylitis than HLA-B27 (−) patients. A long-term prospective study of psoriatic spondylitis showed a significant increase in the number of patients with syndesmophytes and sacroiliitis, despite no significant increase in the number of patients with inflammatory back pain and stiffness.[36,37] This shows that long-term radiographic progression of patients with PsA with axial manifestations seems to be independent of their spinal mobility.[36,37] Altogether, these results suggest that structural changes, such as syndesmophytes or radiographic sacroiliitis, are more likely to be associated with HLA-B27 positivity in patients with psoriatic spondylitis.

Our study has some limitations. First, this observational study mainly included patients with PsA and AS who had high disease activity and needed biologic therapy. Second, the number of patients with PsA was relatively small for a subgroup analysis. Third, we were unable to compare the data of patients with PsA on a stable regimen of conventional DMARDs. Further investigations using health insurance claims data are currently underway.

In conclusion, we showed that the degree of peripheral arthritis is less severe in Korean patients with PsA who require biologics than that reported in the literature. Furthermore, our study reiterates that psoriatic spondylitis is a common and important clinical pattern in Korean patients with PsA.

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SUPPLEMENTARY MATERIAL

Supplementary Table 1

Comparison of clinical characteristics of patients with HLA-B27 positivity in patients with psoriatic spondylitis, PsA without spondylitis, and AS with psoriasis

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