Healthcare and Burden of Disease in Psoriatic Arthritis. A Comparison with Rheumatoid Arthritis and Ankylosing Spondylitis

ANGELA ZINK, KATJA THIELE, DOERTE HUSCHER, JOACHIM LISTING, JOACHIM SIEPER, ANDREAS KRAUSE, ERIKA GROMNICA-IHLE, ULRICH von HINUEBER, SIEGFRIED WASSENBERG, EKKEHARD GENTH, and MATTHIAS SCHNEIDER for the German Collaborative Arthritis Centres

ABSTRACT. ***Objective.*** To compare quality of life and treatment among patients with psoriatic arthritis (PsA), rheumatoid arthritis (RA), and ankylosing spondylitis (AS) treated by German rheumatologists.

Methods. Data for outpatients with PsA (n = 1863), RA (n = 9627), or AS (n = 1378) enrolled in the national database of the German collaborative arthritis centers in the year 2002 were analyzed. Among those with PsA, 2 subgroups with predominantly peripheral arthritis (n = 1612) and predominantly axial disease (n = 251) were distinguished.

Results. We found a high burden of illness in patients with PsA treated by rheumatologists. Among the 2 subgroups, those with axial PsA had worse outcomes (pain, function) than those with peripheral PsA. However, compared with RA and AS, physician ratings of disease activity and severity were lower in PsA. Concerning access to rheumatology care, there were similarities between AS and axial PsA, with very long disease duration at first visit (mean of about 6 yrs), versus RA and peripheral PsA, with shorter duration (1.6 and 2.5 yrs, respectively). A majority (84%) of patients with PsA were treated with disease modifying antirheumatic drugs. Thirty percent of the patients with PsA currently were under therapy with glucocorticoids, mainly (89%) with a dose < 7.5 mg.

Conclusion. Patients with PsA seen in rheumatologic care have a burden of illness comparable to that of patients with RA or AS. (J Rheumatol 2006;33:86–90)

Key Indexing Terms:
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From the German Rheumatism Research Centre, Berlin, Germany.

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A. Zink, PhD; K. Thiele, Medical Data Manager; D. Huscher, Statistician; J. Listing, PhD, Statistician, Epidemiology Unit, German Rheumatism Research Centre; J. Sieper, MD, Charité, University Medicine Berlin; A. Krause, MD, Immanuel Hospital, Berlin; E. Gromnica-Ihle, MD, Rheumaklinik Berlin-Buch, Berlin; U. von Hinueber, MD, Hildesheim; S. Wassenberg, MD, Evangelisches Fachkrankenhaus, Ratingen; E. Genth, MD, Rheumaklinik Aachen, Aachen; M. Schneider, MD, Rheumatology, Heinrich Heine University, Duesseldorf.

Participating German Collaborative Arthritis Centres: Aachen/Koeln/Bonn (E. Genth), Berlin (J. Sieper), Dresden (H.E. Schroeder), Duesseldorf (M. Schneider), Erlangen (B. Swoboda), Essen (C. Specker), Giessen/Bad Nauheim (K.L. Schmidt), Greifswald (H. Merk), Hannover (H. Zeidler), Heidelberg (U. Schneider), Jena (G. Hein), Leipzig (H. Haentzschel), Luebeck/Bad Bramstedt (W.L. Gross), Magdeburg/Vogelsang (J. Kekow), Mainz/Bad Kreuznach (R. Dreher), Muenchen (M. Schattenkirchner), Muenster (M. Gaubitz), Ostwestfalen/Lippe (H. Mielke), Regensburg/Bad Abbach (U. Mueller-Ladner), Rhein-Main (J.P. Kaltwasser), Rostock (M. Keysser), Saarland (M. Pfreundschuh), Suedbaden (H.H. Peter), Suedwuerttemberg (R. Maleitzke).

Address reprint requests to Prof. A. Zink, Deutsches Rheuma-Forschungszentrum Berlin, Schumannstrasse 21/22, D10117 Berlin, Germany. E-mail: Zink@DRFZ.de

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Psoriatic arthritis (PsA) is an inflammatory peripheral and/or axial arthritis associated with psoriasis. Originally thought to be a variant of seronegative rheumatoid arthritis (RA), it is today considered as a separate entity, distinct from other inflammatory arthritides. It shares a number of genetic, pathogenetic, and clinical features with the spondyloarthropathies[1]. PsA may present in a variety of patterns. The most common initial manifestation is mono- or oligoarthritis that in many cases evolves into a polyarthritis, the most frequent form of PsA. Spine involvement sharing similarities with ankylosing spondylitis (AS) is mostly associated with peripheral arthritis and affects a minority of patients[2].

Compared to RA and AS, there is less information about the burden of illness in PsA. Although considered a benign disease in a majority of cases in previous reports or in population-based samples[3,4], clinical cohort studies described PsA as a progressive, disabling disease in a majority of patients[2,5-7].

Using data from a large rheumatological database, the national database of the German Collaborative Arthritis Centres, we pursued 2 questions: first, how is the overall burden of illness of patients with PsA treated by rheumatol-

ogists compared to 2 other, more thoroughly described, inflammatory rheumatic diseases, RA and AS? This comparison is of special interest since PsA symptoms overlap with those of RA and AS. Second, how are patients with PsA currently treated by rheumatologists compared to the 2 other diseases?

MATERIALS AND METHODS

The national database of the German Collaborative Arthritis Centres has been conducted since 1993. Funded by the federal government, it is the most important source of information in Germany about health services in rheumatology, the burden of illness in the rheumatic diseases, and patterns and trends in treatment of the various diseases. Each outpatient with an inflammatory rheumatic disease, treated in any one of more than 80 rheumatology units (university departments, departments of rheumatology at general hospitals, and rheumatologists in private practices), was recorded once a year with his or her clinical status (physician-derived data) and filled in a patient questionnaire. Patients were asked to participate each year they were seen. Patients usually are referred to the arthritis centers by their general practitioners; however, they could also directly access those rheumatologists who work in private practice. We describe data collected in the year 2002. The database is described in more detail elsewhere[8-10].

In order to facilitate the record forms, it was decided to gather the same data for all patients. Therefore, disease-specific measurements for single diseases were not applied. The physicians recorded onset of symptoms, diagnosis, current treatment, disease activity (numerical rating scale from 0 to 10, 10 being the highest possible activity), and Steinbrocker functional class[11]. Health services utilization, social and family status, employment situation (including absence for sickness during past 12 months), and indicators of quality of life (pain, general health, functional status) were recorded by the patients. Disability was recorded using an 18 item scale of activities of daily living, the Hannover Functional Status Questionnaire (FFbH). The FFbH is similar to the Health Assessment Questionnaire (HAQ) but is more widely used in Germany. The 2 disability scales are highly correlated ($r = 0.87$). FFbH values can be transformed into HAQ values[12].

Diagnoses were recorded with a thesaurus specific for the database. Two terms for psoriatic arthritis (PsA) have been used: "peripheral arthritis with psoriasis" (in this report: peripheral PsA) and "spondarthritis with psoriasis" (axial PsA). The distinction was made by each treating rheumatologist according to their clinical judgment. There were no further criteria applied.

The data were gathered in the arthritis centers and sent to the German rheumatism research center for central data checking and analysis. The SPSS[13] program was used for data processing and statistics.

RESULTS

Demographic data. In 2002, a total of 1863 patients were recorded as having PsA, among them 1612 with peripheral PsA and 251 with axial PsA. In the same year, 9627 patients were recorded with RA and 1378 with AS. Table 1 gives the demographic details of the 5 groups. Mean age in PsA patients (53 yrs) was higher than in AS (49 yrs) and lower than in RA (60 yrs). Mean disease duration was similar in PsA and RA, but higher in AS. Mean age at onset of disease was 42 years in patients with PsA, 49 in RA, and 33 in AS. However, if we consider patients with a disease duration less than 5 years in order to avoid bias from selective mortality, the age at onset is 47 years in PsA, 56 in RA, and 41 in AS. Patients with axial involvement had high rates of early retirement and, if still gainfully employed, of sick leave during the previous 12 months.

Physician ratings of disease activity and functional class. The percentage of patients whose current disease activity was rated high by the physician (5 to 10 on a scale from 0 to 10) was higher in RA and AS patients than in PsA. Also, the proportion of persons with severe disability (Steinbrocker functional class III or IV) was lower in PsA patients than in RA or AS. The mean number of swollen and tender joints (28-joint count) was 3.1 and 4.8 in RA, respectively, indicating moderate disease activity, and 1.7 and 3.9 in PsA. The number of affected joints in patients with axial PsA was half that in peripheral PsA and equal to AS (Table 2).

Health status and quality of life. In addition to the physicians' ratings, patients rated their general health status, their pain during the past 7 days, and their functional status according to the FFbH. Global health status was rated worst

Table 1. Description of patients with psoriatic arthritis (PsA), rheumatoid arthritis (RA), and ankylosing spondylitis (AS).

	Total PsA	Mainly Peripheral PsA	Mainly Axial PsA	RA	AS
n	1863	1612	251	9627	1378
Women, %	56.8	56.0	61.8	77.5	36.9
Age, mean (median) yrs	53.0 (54.0)	52.8 (53.0)	54.6 (56.0)	60.0 (62.0)	48.7 (48.0)
Age at onset, mean (median) yrs	42.1 (42.0)	42.1 (42.0)	41.9 (43.0)	48.7 (50.0)	32.6 (30.0)
Age at onset, mean (median) yrs; < 5 yrs of disease only	47.4 (47.0)	47.3 (47.0)	48.2 (50.5)	55.9 (58.0)	41.2 (40.0)
Disease duration, mean (median), yrs	10.6 (8.0)	10.3 (7.8)	12.4 (9.8)	11.2 (8.3)	15.5 (12.0)
Employed, % (patients < 65 yrs)	53.8	55.5	42.6	39.2	54.3
Women	43.7	44.6	37.6	37.1	45.1
Men	66.1	68.4	49.2	47.4	59.5
Early retired, %	17.3	16.1	25.7	25.2	17.9
Women	19.0	18.1	24.7	24.4	17.6
Men	15.2	13.6	27.0	28.4	18.0
Early retired because of rheumatic disease, %	11.6	10.7	17.6	19.2	13.1
Women	13.3	13.0	15.6	19.1	11.2
Men	9.5	8.0	20.3	19.4	14.2
Sick leave during past 12 mo, % (employed patients)	28.7	27.3	42.1	34.2	37.2

Table 2. Joint involvement, disease activity, and functional class (physician-derived data).

	Total PsA	Mainly Peripheral PsA	Mainly Axial PsA	RA	AS
Mean no. of swollen joints (28-joint count)	1.7	1.7	0.8	3.1	0.7
Mean no. of tender joints (28-joint count)	3.9	4.0	2.0	4.8	1.9
Patients with joint involvement, %	66.7	67.6	42.1	78.7	41.6
Very high disease activity (7–10), %	3.2	3.3	2.8	6.5	6.3
Women	3.0	2.8	3.9	6.5	5.4
Men	3.5	3.9	1.0	6.5	6.9
High disease activity (5–10), %	15.1	15.9	9.6	22.3	20.0
Women	14.0	14.6	11.0	22.3	16.9
Men	16.4	17.7	7.3	22.5	21.8
Steinbrocker functional class III or IV, %	7.5	6.4	14.6	14.0	14.3
Women	8.7	7.4	15.8	14.9	13.2
Men	6.0	5.0	12.6	11.2	15.0

by patients with axial PsA (one-third rated 7 to 10 on the rating scale, 10 reflecting the worst possible status), followed by AS. In general, women rated their global health poorer than men. The high burden of disease in axial PsA and AS is also reflected in their mean pain intensity ratings of 5.4 and 4.8, respectively, compared to 4.4 in peripheral PsA and 4.6 in RA. In accord with general health ratings, pain ratings were generally higher in women than in men.

Global functional ability according to the FFbH was more severely limited in patients with RA, AS, or axial PsA than in those with peripheral PsA, independent of age. Women in all disease groups had more functional limitation than men. At age 41 to 70 years, patients with axial PsA had disability equal to patients with AS of the same age. For better international comparability, in Table 3 the FFbH values are also given as HAQ values. The percentage of patients with a HAQ > 1 was higher in axial PsA, RA, and AS than in peripheral PsA.

However, regarding the individual items of the FFbH, patients with RA and peripheral PsA on the one hand and AS and axial PsA on the other showed remarkable similarities. Hand function, e.g., opening a water faucet, was more frequently limited in RA (45% of patients had difficulties or could not do it at all) and peripheral PsA (34%) than in AS or axial PsA (14% and 23%). The same applied to handwriting (29% and 24% vs 11% and 18%, respectively). However, getting up from lying on the back was difficult for 75% and 77% of those with AS and axial PsA, respectively, and for 50% of those with RA and peripheral PsA. These functional limitations reflect the typical patterns of joint involvement.

Healthcare. Mean disease duration at first visit to a rheumatologist was 1.6 years in RA and 5.9 years in AS (Table 4). Patients with mainly peripheral PsA were first seen after a mean disease duration of 2.5 years, those with mainly axial PsA much later. Two-thirds of the patients with RA and 55% of those with peripheral PsA were first seen by a rheumatologist within 12 months from symptom onset. In contrast, this applied only to slightly more than one-third of the patients with AS or axial PsA. Patients in all groups had between 3 and 5 visits to a rheumatologist per year and between 18 and 22 visits to a general practitioner. There was

Table 3. Quality of life (patient-derived data).

	Total PsA	Mainly Peripheral PsA	Mainly Axial PsA	RA	AS
Functional status (FFbH, 0–100), mean	75.6	76.8	67.6	68.8	71.8
Women	71.9	73.2	64.5	66.9	69.8
Men	80.3	81.4	72.4	75.7	72.9
Age < 40 yrs	83.0	84.6	71.1	81.8	78.4
41–50	78.7	79.8	70.0	75.6	71.7
51–60	73.1	74.6	64.6	68.4	67.1
61–70	72.8	73.8	68.4	67.7	68.1
> 70	61.4	61.7	56.9	60.8	62.9
Severe disability (< 50 FFbH), %	12.7	12.0	17.2	22.0	15.7
HAQ > 1 (transformed values), %	43.4	40.1	64.2	53.6	51.5
Pain intensity (last 7 days), mean	4.5	4.4	5.4	4.6	4.8
Severe pain (7–10 on NRS), %	25.6	23.7	37.3	25.6	29.8
Poor health (7–10 on NRS), %	23.0	21.2	34.3	25.0	26.8

FFbH: Hannover Functional Status Questionnaire[12]. NRS: numerical rating scale, 1–10.

Table 4. Healthcare among study patients.

	Total PsA	Mainly Peripheral PsA	Mainly Axial PsA	RA	AS
Disease duration at first contact with a rheumatologist, mean (median), yrs	2.9 (1.0)	2.5 (1.0)	6.4 (2.0)	1.6 (0.7)	5.9 (3.0)
Seen by a rheumatologist within first year of disease, %	52.5	54.5	39.9	64.8	37.5
Visits to a rheumatologist per year, mean	3.9	4.0	3.3	4.7	4.2
Visits to a GP per year, mean	20.3	20.4	19.8	21.6	18.2
Patients with inpatient treatment during past 12 mo, %	12.7	13.2	9.7	19.3	10.2
Patients with inpatient rehabilitation during past 12 mo, %	11.3	10.6	15.2	11.8	14.1

a distinct difference in the percentage of patients who had been treated as inpatients in a hospital during the past 12 months between those with RA (19%) and those with the other diseases. In addition to acute care hospitals, patients in Germany can be sent to inpatient rehabilitation, in particular if their ability to work is threatened. There was no significant difference between the groups concerning the percentage of patients with inpatient rehabilitation during the past 12 months. More than one-fourth of all patients with RA compared to 19% to 20% of patients with one of the other diagnoses had had any kind of inpatient treatment.

Drug and complementary treatment. At registration, the majority of patients with PsA (84%) were treated with one of the disease modifying antirheumatic drugs (DMARD) established in the treatment of RA (Table 5). DMARD combination therapy was applied to 13% of patients with PsA, which was lower than in RA and higher than in AS.

Half the patients with RA were treated with low dose glucocorticoids, up to 7.5 mg/day, compared to 27% of the patients with PsA.

Drugs to prevent or treat osteoporosis were prescribed more frequently to patients with RA. This applied to women and men.

Nonmedicinal therapies, like individual or group physiotherapy, were prescribed to a majority of patients with AS or axial PsA and almost half of all others.

DISCUSSION

Compared to RA or AS, there is less information on healthcare and outcomes of disease in PsA. The thesaurus used in our database distinguishes between PsA with (predominant or exclusive) peripheral involvement and that with (predominant or exclusive) axial involvement. Regarding joint involvement, type of functional disability, and the kind of drugs prescribed it is obvious that these 2 groups overlap to a great extent. In general, the joint involvement in PsA in our data might be an underestimate, as the 28-joint count might miss important joints in PsA such as the distal interphalangeal joints.

With 14% of all cases of PsA, the group with axial PsA is rather small in our series. Torre Alonso, *et al*[2], who distinguished 5 groups according to Moll and Wright[14], found that 23% of 180 patients with PsA had spondarthritis (sacroiliitis and/or spondylitis); Gladman, *et al*[7] found sacroiliitis in 20% of patients with PsA.

Table 5. Current treatment (percentage of patients).

	Total PsA	Mainly Peripheral PsA	Mainly Axial PsA	RA	AS
Any DMARD therapy	83.9	84.1	82.5	90.0	52.9
MTX	65.9	65.8	66.4	62.3	24.8
SSZ	12.0	11.6	13.9	11.8	19.1
Antimalarials	2.7	2.8	1.8	12.0	3.2
Biologics	2.1	1.9	3.6	5.5	6.2
Other DMARD	7.5	7.6	6.7	13.8	4.2
Combinations of more than 1 DMARD	12.7	12.1	16.1	22.9	5.5
Nonselective NSAID	39.2	39.5	37.3	35.0	51.9
Coxibs	18.7	18.7	18.4	18.4	21.5
Low dose steroids (up to 7.5 mg/day)	26.6	24.7	37.8	49.7	15.6
High dose steroids (> 7.5 mg/day)	3.2	3.3	2.8	7.0	3.2
Any antiosteoporotic medication	26.8	26.0	31.3	48.6	22.0
Women	31.4	31.5	30.9	51.1	26.0
Men	20.4	18.7	32.1	40.1	19.6
Physiotherapy (individual)	46.0	40.3	75.6	41.8	64.0
Physiotherapy (group)	9.5	8.7	13.5	9.2	13.7

DMARD: disease modifying aantirheumatic drug, MTX: methotrexate, SSZ: sulfasalazine, NSAID: nonsteroidal antiinflammatory drug.

We found a female preponderance in the total PsA group and even in those with mainly axial involvement. Even though there is a male predominance in almost all clinical trials, in observational cohort studies the reports of male and female preponderance are balanced. In the review by Gladman, *et al*[15] 5 out of 10 reports show a female predominance in the range of 53% to 60%.

We found that age at onset in all patients was in accord with other series, which give figures around the 40th year[4,16,17]. However, the subgroup of patients with a disease duration of less than 5 years had a significantly higher age at onset. This illustrates the bias due to selective mortality in series describing long-standing disease. We suggest that it is useful to report the age at onset in clinical samples for the subgroup with shorter disease duration because this is more likely to reflect the true situation.

Our data confirm smaller clinical cohort studies from Britain and Canada that found similar disability and reduced quality of life in patients with PsA compared to RA[18,19].

Concerning drug treatment, methotrexate, cyclosporin A, leflunomide, infliximab, and etanercept are currently approved for patients with PsA in Germany. However, various other drugs are used. In light of the limited evidence from trials, German rheumatologists transfer their experiences with the treatment of RA to peripheral PsA. There was an astonishingly high proportion of patients with axial PsA receiving systemic glucocorticoids (41%). This reflects both the high proportion of patients with peripheral joint involvement and also the treatment patterns of nonrheumatologist physicians, as the majority of the patients had already had this treatment before referral.

We used a large routine database of patients seen in rheumatology outpatient clinics and practices. The strength of this approach is that it allows direct comparisons between the 3 most frequent inflammatory rheumatic diseases. One of the weaknesses is that it was not possible to use specific questionnaires for the various diseases. We more or less missed the burden resulting from skin psoriasis, which might only in part be indicated in the patients' global assessment of their health status.

Another weakness is that the database includes patients only after referral to a rheumatologist. We do not know how patients are treated who never reach a rheumatologist. Also, we do not know whether the decision for referral is made in similar ways in all diseases. Even among rheumatologists, a Dutch study found high variation in diagnosis and delivery of care using standard patients[20].

Due to the shortage of rheumatologists in Germany (only about 300 with a background in internal medicine), shared care between rheumatologists and generalists is mandatory. There is a delay of more than 7 years in referral of patients with spondyloarthritides to a rheumatologist. The high ratings for severity, disability, and pain in axial PsA and in AS might reflect this delay. Given that rheumatologists today have effective drugs for the treatment of spondyloarthritis, efforts should be made to shorten this timespan so that PsA patients with axial involvement receive earlier specialist care.

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