Original Article

The Pattern of Psoriatic Arthritis in Kashmir: A 6-Year Prospective Study

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Abstract

Background: The prevalence, clinical presentation, and patterns of psoriatic arthritis (PsA) vary in different parts of the world. The scenario of PsA in west is different from that of Asia. Moreover, the oligoarticular type which was considered most prevalent earlier has been replaced by polyarticular type. **Aim:** The study was to the clinical profile of psoriasis patients associated with PsA in Kashmir valley of India. **Materials and Methods:** This was a noninterventional, observational, prospective, hospital-based study involving 150 successive patients of PsA over a span of 6 years. Severity of the skin and nail involvement was assessed by Psoriasis Area and Severity Index (PASI) and Nail Psoriasis Severity Index (NAPSI), respectively. PsA was diagnosed by classification criteria for PsA. The number and pattern of swollen and tender joints was counted and classified by Moll and Wright's classification criteria. **Results:** Plaque-type psoriasis was the most common clinical type, observed in 122 (81.33%) patients followed by erythrodermic psoriasis in 10 (6.66%) patients and pustular psoriasis in eight (5.33%) patients. PsA occurred between 30 and 40 years of age in 105 (70%) patients. The cutaneous involvement occurred before joint involvement in 113 (75.33%), while they occurred simultaneously in 30 (20%) cases and the PsA preceded the skin involvement in seven (4.66%) cases. Symmetrical polyarthritis was the commonest clinical presentation and was seen in 90 (60%) patients. Nail involvement due to psoriasis was present in 120 (80%) patients. Commonest nail change found was pitting and seen in 60 (40%) patients. **Conclusion:** The clinical pattern of PsA varies in different parts of the world. Knowledge of the clinical presentation of PsA in a given area is necessary for the successful management of this disease.

Keywords: Erythrodermic psoriasis, nail psoriasis, psoriatic arthritis, symmetric polyarthritis

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Introduction

Psoriatic arthritis (PsA) is an inflammatory arthritis associated with psoriasis, usually seronegative for rheumatoid factor (RF).[1] While many patients with PsA do well, there is a group of patients who suffer from severe disease, with progression of articular damage and increased morbidity. The prevalence of PsA varies from 6 to 34% in patients with psoriasis in western population. In Indian patients with psoriasis, the prevalence has been reported as 8.7%.[2] PsA usually follows the diagnosis of psoriasis by about 10 years. However, in 15% of the patients, arthritis and psoriasis begin simultaneously, and in additional 15%, arthritis precedes psoriasis by as long as 15 years.[3] Arthritis is described as inflammatory in nature, since it presents with pain and stiffness that is typically aggravated by rest and improves with activity, and is associated with tenderness and swelling in the affected joints. Almost half of the patients with PsA may have an inflammatory arthritis of the back as well, manifesting, particularly in the lower back. Other typical features include enthesitis (inflammation at tendon insertion into bone) and dactylitis (inflammation of the whole digit).

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In the initial description of the clinical patterns of PsA, the oligoarticular type was the most common reported form, occurring in 70% of the patients. More specific patterns like distal pattern and arthritis mutilans, were supposed to be uncommon, occurring in less than 5% each. However, the subsequent studies have shown the polyarthritis to be more common.[4]

The most frequently used PsA classification has been Moll and Wright's classification, while the recently proposed Classification Criteria for Psoriatic Arthritis (CASPAR) are simple and highly specific.[5] Keeping in view the fact that the clinical presentation and patterns of PsA in a given geographical area are important for optimal management, we analyzed the spectrum of PsA in our patient population of psoriasis.

Materials and Methods

This was an observational, prospective, hospital-based study in which the clinical data of 150 patients of PsA was analyzed over a period of 6 years (June 2008-June 2014). The study was approved by the Ethical Committee of Government Medical College (EC-GMC) Srinagar. Two dermatologists and one radiologist were involved for analyzing the data. The data of clinically diagnosed cases of PsA included the age of onset and disease duration, disease morphology, aggravating factors, treatment details, and presence of nail involvement. The data was recorded on a predesigned pro forma. Severity of the skin and nail involvement was assessed by Psoriasis Area and Severity Index (PASI) and Nail Psoriasis Severity Index (NAPSI), respectively.[6,7]

Baseline laboratory evaluation including complete hemogram, erythrocyte sedimentation rate (ESR), blood chemistry, lipid profile, RF, C-reactive protein (CRP), serum calcium, uric acid, and radiographic changes of the affected joints were also recorded.

PsA was diagnosed by CASPAR.[5] To fulfill the diagnosis of PsA, a patient must have an established inflammatory articular disease (joint, spine, or entheseal) and a score of three or more based on the parameters given in Table 1. The number and pattern of swollen and tender joints was counted and classified by Moll and Wright's classification criteria as follows:[1]

1. Distal interphalangeal arthritis (DIP),
2. Asymmetrical oligoarthritis (≤4 joints),
3. Symmetric polyarthritis (≥5 joints),
4 Arthritis mutilans, and
5. Arthritis of spine (spondylitis).

Spondylitis was diagnosed when at least one of the following was present in a patient with inflammatory back pain with or without peripheral joint disease:

Table 1: Classification criteria for psoriatic arthritis (CASPAR)[5]

Evidence of current psoriasis, a personal history of psoriasis, or a family history of psoriasis Current psoriasis is defined as psoriatic skin or scalp disease present today as judged by a rheumatologist or dermatologist[£] A personal history of psoriasis is defined as a history of psoriasis that may be obtained from a patient, family physician, dermatologist, rheumatologist, or other qualified healthcare provider A family history of psoriasis is defined as a history of psoriasis in a first- or second-degree relative according to patient report
Typical psoriatic nail dystrophy including onycholysis, pitting, and hyperkeratosis observed on current physical examination
A negative test result for the presence of rheumatoid factor by any method except latex, but preferably by enzyme-linked immunosorbent assay (ELISA) or nephelometry, according to the local laboratory reference range
Either current dactylitis, defined as swelling of an entire digit, or a history of dactylitis recorded by a rheumatologist
Radiographic evidence of juxta-articular new bone formation, appearing as ill-defined ossification near joint margins (but excluding osteophyte formation) on plain radiographs of the hand or foot[5]

To meet the CASPAR, a patient must have inflammatory articular disease (joint, spine, or entheseal) with three or more than three points from the above five categories. [£]Current psoriasis is assigned a score of 2; all other features are assigned a score of 1.

1. Tenderness on the spine or sacroiliac joint,
2. Sacroiliitis on pelvic X-ray (anteroposterior view), and
3. Spinal syndesmophytes on spine X-ray.

The presence of enthesitis and dactylitis was diagnosed clinically and sites were recorded. Enthesitis was diagnosed on clinical examination at the following sites:

a. Common extensor insertion at the lateral epicondyl of humerus,
b. Medial femoral epicondyle, and
c. Achilles tendon insertion at the calcaneus.

Dactylitis was defined by the presence of spontaneous fusiform swelling and/or toe extending beyond the joint line associated with tenderness.

Statistical analysis

The data collected was analyzed by using Statistical Package for Social Sciences (SPSS), version 16.0. A *P*-value of <0.05 was considered as statistically significant.

Results

Overall 150 patients of psoriasis with PsA were seen over a period of 6 years. All the patients fulfilled at least one of the above criteria indicative of joint involvement. The mean age of the patients was 35.5years (range 15-65 years) and the male to female ratio was 4:1 (120 males and 30 females). The mean duration of the psoriasis

was 10 years (range, 6 months-40 years). The mean age of onset of PsA was 37 years (range, 14-60 years) and median for the duration of PsA was 3.0 years (range, 1-40 years). Family history of psoriasis was present in 6% of our patients. Plaque-type psoriasis was the most common clinical type, observed in 122 (81.33%) patients followed by erythrodermic psoriasis in 10 (6.66%) patients, pustular psoriasis in eight (5.33%) patients, and acral psoriasis with photosensitive component in 10 (6.66%) patients. The median PASI of our study group was 13.5 (range 2.3-70).

Nail involvement due to psoriasis was present in 120 (80%) of the patients. Commonest nail change found was pitting and seen in 60 (40%) patients, followed by onycholysis in 24 (16%), subungual hyperkeratosis in three (2%), nail fragmentation in three (2%), and 30 (20%) patients had mixed nail changes of varying combinations of pitting, subungual hyperkeratosis, and onycholysis. Median NAPSI in our study group was 25 (range 0-130). There was no statistically significant correlation between the number or severity of joint involvement and the NAPSI score.

PsA occurred between 30 and 40 years of age in 105 (70%) patients. The cutaneous involvement occurred before joint involvement in 113 (75.33%) cases by a mean interval of 7 years (range 6 months-35 years), while they occurred simultaneously in 30 (20%) cases and the PsA preceded the skin involvement in seven (4.66%) cases with a mean interval of 3.5 years (range 2-7 years). These patients had initially presented to rheumatologists, but came to us only after they developed skin lesions.

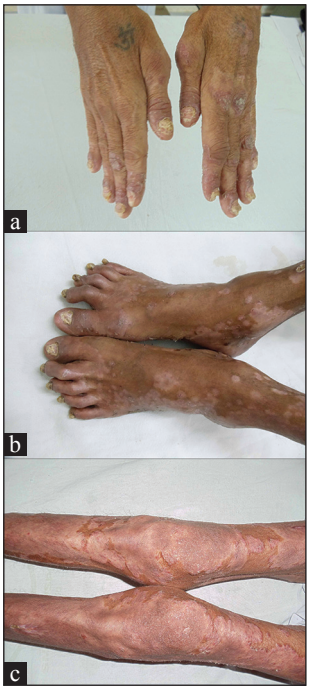

Figure 1: (a) Symmetric polyarthritis involving small joints of both thumbs along with psoriatic nail changes and skin involvement. Note the involvement of proximal interphalangeal (PIP) joint of left index finger. (b) Symmetric polyarthritis involving joints of toes. (c) Symmetric polyarthritis involving both knee joints

Symmetrical polyarthritis was the commonest clinical type and seen in 90 (60%) patients [Figures 1 and 2]. This group includes patients with isolated symmetrical polyarthritis in 54 (36%) and symmetrical polyarthritis with spondylitis in 36 (24%) patients followed by predominantly asymmetrical oligoarthritis in 21 (14%) patients and predominantly DIP in 12 (8%) patients. Other combinations of patterns like spondylitis and asymmetric oligoarthritis were seen in 12 (8%) patients. Isolated spondylitis was present in nine (6%) cases and arthritis mutilans in three (2%) [Figure 3]. Rare variants like manubriosternal joint arthritis, temporomandibular joint involvement, and calcaneal spur were seen in one (0.66%) patient each [Table 2].

The PASI score of our study group ranged from 2.3 to 70 (median PASI = 13.5). Body surface area (BSA) involvement ranged from 2 to 90%, with a median BSA involvement of 20. There was no statistically significant correlation between the number or severity of joint involvement and PASI score.

Enthesitis was present in 48 (32%) cases; most common site of involvement being the Achilles tendon which was seen in 30 (20%), followed by patellar tendon in eight (5.3%), plantar fascia in five (3.3%), and rotator cuff in five (3.3%) patients.

The mean ESR was 35.6 (range 10-65 mm/first hour). CRP was raised in 105 (70%) patients. RF was present in nine (6%) patients. Serum uric acid levels measured in patients ranged from 2.9 to 9.2 mg/dl (mean = 4.96 mg/dl). Serum calcium ranged from 6.9 to 12.6% (mean = 9.7 mg/dl).

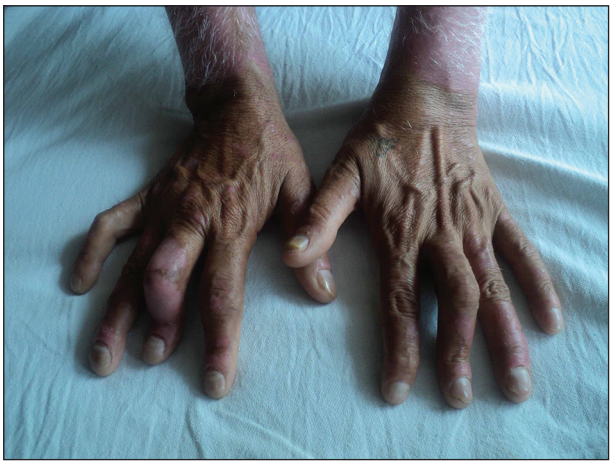

Figure 2: Symmetric polyarthritis involving joints of hands with flexion deformities

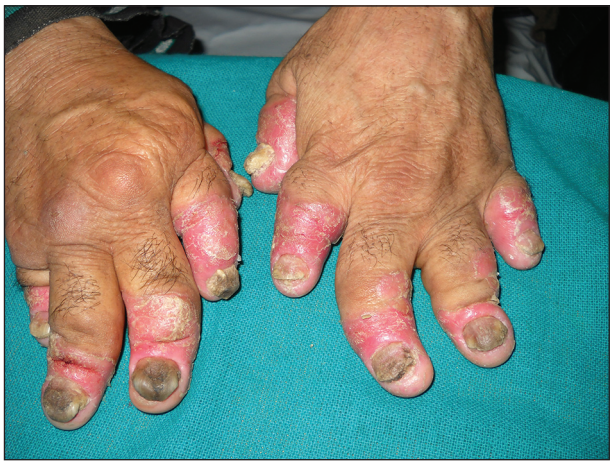

Figure 3: Arthritis mutilans with shortened and deformed digits and severe psoriatic nail changes

Table 2: Pattern of psoriatic arthritis

Pattern of psoriatic arthritis	Number	Percentage
Isolated symmetrical polyarthritis (SP)	54	36
SP with spondyloarthropathy (SA)	36	24
Asymmetrical oligoarthritis	21	14
SA with asymmetrical oligoarthritis	12	8
Distal interphalangeal (DIP) arthritis	12	8
Isolated spondylitis	9	6
Arthritis mutilans	3	2
Calcaneal spur	1	0.66
Manubriosternal joint arthritis	1	0.66
Isolated dactylitis	1	0.66
Temporomandibular joint involvement	1	0.66

Fifteen patients had levels less than 9 mg/dl; most of them were having pustular psoriasis. Abnormal X-ray findings were seen in 45 (35%) patients. The most common abnormal radiologic finding was erosion seen in 23 (15.3%), followed by periosteal reaction in 17 (11.3%), followed by sacroiliitis in 16 (10.6%), joint space narrowing in nine (6%), ankylosis and sclerosis in six (4%) cases, and calcaneal spur in one (0.66%) patient.

Discussion

Psoriasis is a chronic inflammatory skin disease that affects 1-3% of the population.[8,9] For most of the patients, the disease is more emotionally than physically disabling, as its impact on quality of life may be significant even if relatively limited BSA is involved, while for others it can be associated with an essentially disabling arthritis limiting daily activities to a considerable extent.[10] The prevalence of PsA varies worldwide, ranging from 6.25 to 48% in Europe, North America, and South Africa; but a prevalence of 8.7% has been found in India.[2,11] The prevalence rate varies among different studies due to the geographical and ethnic differences, different characteristics of the patients with psoriasis, and the type of diagnostic criteria used for PsA.[12]

PsA affects women and men at a similar rate, and the peak age of onset is around 36 years, although it may occur in childhood or older age. Studies from the Indian subcontinent also show the onset in the 4th and 5th decades of life.[2,13] The mean age of onset of PsA has been 39.2 years in the Chinese population.[14] We also observed comparable age of onset (30-40 years) in 70% of our patients along with a male preponderance (male:female (M:F) = 2:1) like other Indian studies.[15,16] This male preponderance could be explained by the higher proportion of male patients attending our hospital.

In our study, the cutaneous involvement occurred before joint involvement in 75% of cases by a mean interval of 7 years (range 6 months-35 years), while they occurred simultaneously in 20% of cases and the PsA preceeded the skin involvement in 10% of cases with a mean interval of 3.5 years (range 2-7 years). These patients had initially consulted rheumatologists for their joint involvement, but came to us only after they developed the skin lesions. Similar observations have been made in various studies from other parts of the world.[17] Several authors have found the onset of joint pain after the onset of skin lesions in 50.8%, before in 12.1%, and simultaneously in 37% of the cases.[13] We also observed that occurrence of PsA was more frequently in the early years of psoriasis, more so within the first 10 years of the disease. As much as 85% of the patients presented within this duration. This can be due to the immunomodulation of various drugs used during the course of the disease. Our patients also reported exacerbation of their arthritis during the winter months (December-March) of the year when there is decrease in the mean temperature which can be explained by the aggravation of the joint pain by the cold.

Chronic plaque psoriasis being the most common morphological type of psoriasis was present in 81% of the patients with trunk and limbs more frequently involved. This observation was similar to that made by authors like Yang *et al.*,[14] and Radtke *et al.*,[18] who found the chronic plaque psoriasis to be the commonest morphological type ranging from 72 to 92%. The relationship between the severity of the skin disease and the severity of the arthritis has been the subject of some debate. Early reports suggested PsA was more common in patients with severe psoriasis.[19] We did not observe significantly higher PASI in our patients with PsA as has also been observed by Kumar *et al.*, in a similar study from India.[2] Thus, it seems more likely that a relationship between extent and severity, and linked flares, occurs only in those patients who have simultaneous onset of skin and joint disease.[20]

Nail involvement is more frequent in psoriatic patients with associated PsA and has been seen in 67% cases by Jones *et al.*,[21] In our study, 120 (80%) patients had nail involvement, with pitting being the most common finding in 60 (40%) of patients. Nail changes in a patient with psoriasis should prompt a search for joint disease. There was no correlation between the severity of nail and articular involvement in our study which is also confirmed by the earlier studies.[2] There is a strong anatomical link between PsA and nail inflammation.[22] This association can be further investigated by using high-resolution magnetic resonance imaging to detect subtle cases of PsA.

Although PsA can involve any joint, most of the published series have reported that the symmetrical polyarthritis subgroup is the most frequent seen in about 58% of cases.[2,23] In accordance with the published data, our study also documented the symmetrical polyarthritis in 60% of the patients. Most frequently involved joints were the proximal interphalangeal, followed by distal interphalangeal, sacroiliac, and ankle joints. Many authors have demonstrated, like the original description by Wright and Moll, asymmetrical oligoarthritis to be the commonest pattern of PsA, occurring in 42-67% of patients.[24,25] Kumar *et al*., have also reported symmetrical polyarthritis as the most common pattern, while others have reported spondylitis as the predominant type occurring in 50% cases.[2,26] The most comprehensive explanation for symmetrical polyarthritis could be long standing skin disease in our patients (mean disease duration 10 years in our patients). All the patients with joint swelling had associated pain and tenderness. The prevalence of different types of PsA has been found to be variable with the duration of psoriasis. As expected, oligoarthritis is prevalent with shorter duration, whereas with longer duration, polyarthritis predominates.[3] It must also be recognized that the disease pattern will change over time, both with evolution of the disease and with treatment as has been observed by Jones *et al*.[21]

In our study, isolated spondylitis occurred in 6% of patients, although its occurrence as such is uncommon and mostly it occurs with peripheral arthritis, whereas spondylitis with symmetrical polyarthritis was present in 24% and with asymmetrical oligoarthritis in 8% of patients, while published data from rest of the country shows a high figure of spondylitis (49%). This discrepancy from the existing Indian data can be explained by a genetic predisposition for psoriatic spondyloarthropathy in rest of the country.[2]

Dactylitis and enthesopathy are among the hallmark clinical features of PsA occurring in 16-48% of reported cases.[3,27] Enthesitis is the presence of spontaneous pain and tenderness at entheses, while dactylitis is the presence of spontaneous uniform swelling of soft tissues between the small joints of hands and feet to the extent that the actual joint swelling could no longer be independently recognized. Isolated dactylitis was seen in one patient, while 30 of the 54 patients of symmetrical polyarthritis had dactylitis. Thus, overall prevalence of dactylitis in our PsA patients was 20.6%. This is similar to the findings of Rajendran *et al*., who found dactylitis in 19% of their PsA patients.[13]

Arthritis mutilans is the least common clinical type of PsA found in about 1% of Indian patients.[2] These patients present with severe, rapidly progressing inflammation of joints which culminates in the destruction of the joints leading to a permanent deformity. Subsequently, the affected joints become softer, wider, and shorter as a result of ongoing osteolysis.[28] In our study, arthritis mutilans was seen in three (2%) patients, which is comparable to the previous study done by Kumar *et al*.

Conclusion

The clinical presentation and type of PsA varies in different parts of the world. The symmetrical polyarthritis type is now becoming the commonest type on the contrary to asymmetric oligoarticular type which was considered previously to be the most common type. It becomes imperative for a dermatologist to be aware of the clinical presentation of PsA in a given geographical area for the successful management of this disease.

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Conflicts of interest

There are no conflicts of interest.

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