

# Frequency of psoriatic arthritis in patients of psoriasis presenting to Dermatology Department, Mayo Hospital, Lahore

Nadia Sultan, Asad Ali Chaudhry\*, Saima Rehman\*\*, Ghazala Butt<sup>#</sup>, Shahbaz Aman<sup>##</sup>, Shehla Shaukat<sup>###</sup>, Mehek Fatima, Saira Omer

Nadia Sultan, Department of Dermatology, Rahbar Medical and Dental College/ Punjab Ranger's Teaching Hospital, Lahore.

\* Department of Orthopaedic Surgery, CMH Lahore Medical College.

\*\* Department of Dermatology, Saidu Medical College Swat.

<sup>#</sup> Department of Dermatology, Kind Edward Medical University, Lahore

<sup>##</sup> Department of Dermatology, SIMS, Lahore.

## Abstract

**Background** Psoriasis is chronic inflammatory disease characterized by red, scaly, sharply demarcated, plaques, mostly over extensor surfaces of the skin.<sup>1</sup> Disease is variable in duration & periodicity of flares.<sup>1</sup> Psoriatic arthritis is an inflammatory arthritis associated with psoriasis.<sup>1</sup>

**Objective** To determine the frequency of psoriatic arthritis in patients presenting to a tertiary care setting.

**Methods** This was a cross sectional study conducted at OPD, Unit-I, KEMU Mayo Hospital, Lahore for a period of six months. Total 140 patients of psoriasis compatible with the inclusion criteria, were enrolled & evaluated for psoriatic arthritis (as per operational definition).

**Results** 140 patients, 87 (62%) M & 53 (38%) F, mean age of 40.97±14.74 yrs. were enrolled. 65 (46.42%) cases were positive for PsA, 44 (67.69%) M & 21 (32.31%) F, mean age 42.92±13.70.

## Key words

Psoriasis, psoriatic arthritis, clinical patterns, moll and wright criteria.

## Introduction

Psoriatic arthritis (PsA) is an inflammatory arthritis that may be associated with psoriasis of the skin & nails, with usually a negative serological test for rheumatoid factor.<sup>1</sup> The exact frequency of the condition in patients with psoriasis remains uncertain, with the estimated prevalence ranging from 5-30%.<sup>2</sup> Arthropathy can occur at any age and either sex, but the

incidence peaks around 40-50 years, and males are more likely to have the spondylitic form.<sup>3</sup> Approximately 40% of patients with psoriatic arthritis have a positive family history with a concordance rate of 35-70% among monozygotic and 12-20% for dizygotic twins.<sup>2</sup> Important genetic susceptibility loci elicited are HLA Cw6, B13, B17, DR3, DLW3 and HLA B27.<sup>2</sup> The male-to-female ratio for PsA is 1:1, with the exception of some subsets of patients.<sup>4</sup> It typically involves painful inflammation of the joints and surrounding connective tissue and can occur in any joint, but most commonly affects the joints of the fingers and toes. Radiological signs include local

## Address for correspondence

Dr. Nadia Sultan,  
Department of Dermatology,  
Rahbar Medical and Dental College/  
Punjab Ranger's Teaching Hospital, Lahore.  
E-mail: drnadiaasad82@gmail.com

demineralization, narrowing of joint spaces, articular erosion and soft tissue swelling. In arthritis mutilans, osteolysis of heads of metacarpals & metatarsals gives pencil in cup appearance and opera-glass hand deformity. Indicators of poor prognosis are younger age at onset, extensive skin involvement, poly articular synovitis, HIV, high ESR at presentation, large effusions and association with HLA B27, B39, and DLW3.<sup>1</sup>The first study to prospectively assess the incidence of PsA among psoriasis patients was conducted in Toronto recently; 313 psoriasis patients who had at least 1 year of follow-up were included in the analysis. The annual incidence rate was found to be 1.87 PsA cases per 100 psoriasis patients.<sup>1</sup> In another study, out of 100 psoriatic patients enrolled, 46 had joint involvement.<sup>1</sup> One study conducted on 472 psoriatic patient detected arthritis in 40.7%<sup>7</sup>The study of PsA is difficult and has lagged behind the study of other arthropathies in that there are no universally agreed or properly validated case definitions. Although various other criteria have been set to diagnose PsA, the simplest and the most frequently used is the one given by Moll and Wright. Although the sensitivity & specificity of this criteria is not the best however for purpose of comparison with other studies, it is being used.

#### *Moll and Wright criteria and specific features of PsA*

The criteria are<sup>5</sup>

- An inflammatory arthritis (peripheral arthritis and/or sacroiliitis or spondylitis).
- The presence of psoriasis.
- The (usual) absence of serological tests for rheumatoid factor.

I shall also use the same criteria as such a study had not been performed locally in our setup. The rationale of this study was to observe the

frequency of PsA in our population to help diagnose the disease at an early stage and refer it to the concerned speciality.

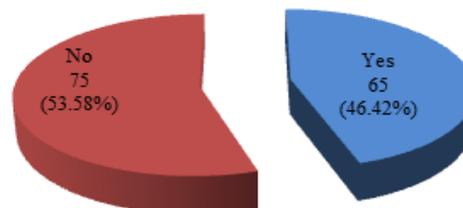
#### **Material and Methods**

Cross sectional study in outpatient Department of Dermatology Unit-I, KEMU/ Mayo hospital, Lahore for a period of six months starting from 20<sup>th</sup> August, 2013 till 20<sup>th</sup> February, 2014.

Sample size estimated using 95% confidence level 4.5% margin of error is 140 through non probability purposive sampling. After taking informed consent ,clinically diagnosed patients of psoriasis of either sex,off or on treatment, aged 1 yrs or above were enrolled.Patient with seropositive arthritides ,osteoarthritis ,trauma-induced arthritis or any connective tissue diseases were excluded from the inclusion criteria. Patients were evaluated for the presence of psoriatic arthritis as per Moll and Wright criteria. All this information was recorded on a predesigned proforma & the data was entered and analyzed through SPSS 16.

#### **Results**

Mean age of all patients was 40.97±14.74 years. Age range of patients was 16-90 years, while mean age of male & female patients was 41.09±14.14 and 40.79±15.81 years respectively. Mean age of total positive cases of PsA was 42.92±13.70, 41.34±12.30 for males, and 46.23±16.07 for females respectively (**Table 1**).



**Figure 1** Frequency of Psoriatic arthritis

**Table 1** Age distribution of patients

	n=140			PsA(+)		Total
	Male	Female	Total	Male	Female	
N	87	53	140	44	21	65
Mean (Years)	41.09	40.79	40.97	41.34	46.23	42.92
SD	14.14	15.81	14.74	12.30	16.07	13.70
Minimum	16	17	16	16	20	16
Maximum	90	80	90	70	80	80

Out of total 140 enrolled psoriatic patients, 87 (62%) were male and 53 (38%) were female (**Table 1**). Gender distribution of positive cases of PsA showed that 44 (67.69%) were male and 21 (32.31%) were female (**Table1**). PsA was diagnosed in 65 (46.42%) patients while the remaining 75 (53.58) patients did not have any joint involvement (**Figure 1**). All Positive cases of PsA (100%) were serologically negative for RA factor.

The radiological changes of the joints were also noted in these patients in collaboration with the orthopaedic department. Out of total 65 positive cases of PsA, 41 (63.08) had local demineralization of peri-articular bone with osteopenia. 16 (24.62) patients had articular erosions of varying degree. In 4 (6.15) cases, the changes were soft tissue swelling in the peri-articular area.

## Discussion

Psoriasis is a common skin condition, which is known to affect about 1-2% of the world population.<sup>6</sup> PsA is a known extra-cutaneous complication of psoriasis, which has variably been reported to affect 5-40% of psoriasis patients.<sup>7</sup> PsA has a variable clinical picture, which has led to some difficulties in classification of the disease. Studies describing the clinical patterns of PsA in Asian population are few.<sup>8</sup> It has been suggested that the risk of developing PsA is more in Indian ethnicity as compared to Chinese and other oriental races. Divergent distribution of HLA in different ethnic groups and other genetic determinants

may account for these prevalence difference.<sup>2,8</sup> Studies addressing development of arthritis in psoriasis in Pakistani population are few and suggest a different clinical pattern.<sup>9,10</sup> This difference may either be due to variation in number of patients enrolled, variable study period & different study designs. Another major cause of this discrepancy is the lack of a single diagnostic criteria for diagnosis of PsA. Systematic reviews have also found widely variable disease frequency among different populations.<sup>6</sup>

In current study, mean age of patients who had PsA was 42.92±13.70 years which lies in the 4th-5th decade. Rajendran from Chennai also found a peak incidence of PsA in the 4th and 5th decades of life.<sup>1</sup> A local study from Pakistan conducted by Ejaz has reported the mean age of patients with PsA to be 39.8±15.8 years.<sup>11</sup> Saeed M in her study reported the average age of patients as 44 years who had PsA.<sup>11</sup> Age distribution of psoriatic arthritis patients in the current study is more or less consistent with the age distribution reported by Ejaz, Saeed M and Rajendran.<sup>1,11</sup>

An epidemiological study from Norway reported that, mean age of PsA as 35±11.8 years.<sup>2</sup> This difference in the mean age could be due to geographical and racial differences.

Gender distribution of patients with PsA in current study shows that 67.69% patients were male and 32.31% were females. The present study showed that the prevalence is more in a male-predominant population. A local study

from Pakistan reveals male predisposition where (71%) presented with PsA as compared to female patients (29%).<sup>11</sup> Recently Mithun in his study reported that 63.12% patients of PsA were male and 36.87% were females, showing male patient dominance over female patients.<sup>9</sup> Saeed M in her study also reported male predominance (Male:20, Female:17).<sup>11</sup> Gender distribution in our study is comparable with the results reported by Mithun and other studies who reported male predisposition.<sup>9,11</sup> Whether this is due to better male access to medical facilities in Asian population, or a true male preponderance remains to be sought out.

The frequency of PsA in the current study is 46.42%. A study conducted by Ejaz has also reported similar frequency of PsA (46%).<sup>11</sup> Therefore, the result of present study is consistent with the study conducted by Ejaz.<sup>11</sup> An Indian study conducted by Mithun reported arthritis among 32.6% patients of psoriasis.<sup>9</sup> The difference in the percentage might be attributed to the fact that Mithun has used CASPAR criteria for the diagnosis of PsA, whereas in the current study Moll & Wright criteria have been followed.<sup>12</sup> Saeed M conducted a local study on the prevalence & different patterns of PsA, & the results show 35% prevalence of arthritis.<sup>11</sup> This variation might be due to difference in her sample size which does not match ours. We enrolled a total of 140 patients, whereas, 100 patients of psoriasis were included in that study. Nossent in his study reported arthritis in 329/657 (50%) of patients with PsA.<sup>13</sup> The increased frequency reported in this study conducted in Norway can again be attributed to the greater sample size in Nossent's study. It may also be due to better medical awareness among people in the western world and good medical facilities available, so that patients approach the doctor at an early stage of disease. All these factors contribute to a huge variation in the worldwide reported incidence of PsA among the patients of

psoriasis which is about 6-40%.<sup>13</sup>

In the current study, skin disease has antedated arthritis in all the reported cases of PsA. These results also match with the results of Saeed M, who also reports psoriasis of skin preceding arthritis in all positive cases. The mean duration of psoriasis in our study is  $5.15 \pm 3.99$  years & the range is 0.5-19 yrs. This is more or less comparable with the results of Mariam's study where the mean duration of psoriasis is 4.5 years & the range is 0.5-20 yrs.<sup>11</sup>

The Moll and Wright criteria for diagnosis of PsA is the simplest and most frequently used for research. It includes presence of inflammatory arthritis, presence of psoriasis and absence of rheumatoid factor.<sup>11</sup> The high number of joint involvement in psoriatics seen in current study was partly due to lax inclusion criteria but also partly due to high incidence of joint involvement in Asians as shown by other researchers.<sup>10</sup>

## **Conclusion**

The frequency of arthritis in Psoriasis as per this study is 46.42%. Majority of the positive cases of psoriatic arthritis were males, with their age lying in the 3rd & 4th decade & most of them developed joint involvement during the initial ten years of psoriasis onset. Maximum number of patients were males & joint disease appeared during the initial ten years of psoriasis onset. Therefore, according to the results of current study, it can be concluded that psoriatic arthritis mostly affects the males in their late young to middle age, & develops during the early years of psoriasis. Further studies are advised under joint supervision of dermatologists and rheumatologists for elaborate and comprehensive results on these patterns and involvement of other body joints. It is highly desired to standardize one single diagnostic criteria & then research be done on that, so that

one consensus can be made on the prevalence & the most common pattern of PsA presenting worldwide.

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