

## Original Article

## The Prevalence of Psoriatic Arthritis in Psoriatic Patients in Tehran, Iran

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**Background:** Psoriatic arthritis is an inflammatory arthritis which is associated with psoriasis. There is no general agreement in the literature regarding the epidemiology of psoriatic arthritis. In this study, we evaluated the prevalence of psoriatic arthritis in a relatively large number of psoriatic patients.

**Methods:** Three hundred and twenty patients with psoriasis were evaluated in a cross-sectional study. The psoriasis area and severity index, family history, demographic variables, and some other factors (e.g., clinical type and location of the disease) were assessed. The patients were examined for signs of arthropathy and the suspects were referred to a rheumatologist for further evaluation and confirmation of the diagnosis.

**Results:** Psoriatic arthritis was observed in 29 (9.1%) patients. The prevalence of Psoriatic arthritis in men (10.1%) was not statistically different from that of women (7.8%). The most common type of psoriasis in all patients, with and without psoriatic arthritis, was chronic plaque psoriasis. The mean±SD psoriasis area and severity index was significantly ( $P<0.05$ ) higher in patients with psoriatic arthritis ( $24.33\pm 10.36$ ) than those without psoriatic arthritis ( $10.70\pm 8.44$ ). Nail involvement was significantly more common in patients with psoriatic arthritis than those without psoriatic arthritis. HLA B27 was the most common HLA detected in patients with psoriatic arthritis.

**Conclusion:** Dermatologists are usually the first physicians to detect signs and symptoms of psoriatic arthritis and need to work closely with rheumatologists to establish the diagnosis and start appropriate treatments which will address both the skin and the joint disease.

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**Keywords:** Arthritis • epidemiology • Iran • psoriasis • prevalence

### Introduction

Psoriatic arthritis (PsA) is an inflammatory arthritis which is associated with psoriasis. Although PsA has been recognized as a separate entity for more than 30 years,<sup>1</sup> its diagnosis is still challenging. Not everyone with psoriasis will develop PsA; nonetheless, physicians should look for its clinical

signs and symptoms in all psoriatic patients. On the other hand, not every psoriatic patient with joint disease has PsA. Rheumatoid arthritis, osteoarthritis, and arthralgia are common in the general population as well as in patients with psoriasis.<sup>2</sup>

Epidemiologic data are important in diagnosing diseases. However, there is no general agreement in the literature regarding the epidemiology of PsA. The prevalence of PsA among patients with psoriasis varies from 6% in the Mayo Clinic study, to 42% in an outpatient clinic in South Africa.<sup>3</sup> The peak age of onset of PsA is between 20 and 40 years. It affects men and women equally; however, men show less disease progression than women.<sup>3,4</sup> In psoriatic patients, PsA is more common among those with more severe disease.<sup>5</sup>

In this study, we determined the prevalence of

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PsA in a relatively large number of psoriatic patients. In addition, the relation of PsA with several epidemiologic factors such as age of onset, gender, family history, and severity of disease was assessed.

## Patients and Methods

Three hundred and twenty patients with psoriasis were evaluated in a cross-sectional study. These patients were recruited consecutively from those with the clinical diagnosis of psoriasis (with or without pathology confirmation) referred to Razi Hospital, Tehran, Iran, from May 2003 through April 2004. The investigational protocol was approved by the institutional review board of the Center for Research and Training in Skin Diseases and Leprosy.

Clinical evaluation was performed by a dermatologist. The psoriasis area and severity index (PASI) was used as a measure of clinical severity of psoriasis. In addition, the information on family history, demographic variables, and some other factors (e.g., clinical type and location of the disease) were collected. The patients were also examined for signs of arthropathy; clinically suspected cases were referred to a rheumatologist for further evaluation. The diagnosis of PsA was made according to the Moll and Wright diagnostic criteria.<sup>6</sup>

Statistical analyses were undertaken by SPSS, version 10 (SPSS Inc., Chicago, IL, USA). A *P* value less than 0.05 was considered statistically significant. Distributions of variables were tested for normality, and accordingly, either an independent-sample Student's *t*-test or nonparametric tests were used. Chi-square test was used to examine differences in nominal variables between patients with and without PsA. Mean values are presented as mean±SD.

## Results

Three hundred and twenty (179 males) patients

with psoriasis were evaluated. Twenty-nine (9.1%) of them (17 men) suffered from PsA. The prevalence of PsA among men (10.1%) was not significantly different from that of women (7.8%). The mean age of patients with PsA was 43.3±18.9 (range: 13 – 71) years, while it was 35.5±17.6 (range: 4 – 83) years in patients without PsA (*P*>0.05). The mean age at onset of psoriasis was 33.1±20.5 years in patients with PsA and 24.9±16.8 years in those without PsA (*P*>0.05). Twenty-nine patients without PsA (9.9%) and six (20.6%) with PsA had a positive family history of psoriasis (*P*>0.05).

The most common type of psoriasis in both patients with and without PsA was chronic plaque psoriasis; there was no difference between patients with and without PsA regarding the type of psoriasis (Table 1). Mean PASI score in patients with PsA was 24.33±10.36; it was 10.70±8.44 in those without PsA (*P*<0.05).

Nail involvement was significantly more common in patients with PsA than those without PsA. It was observed in 28 (97%) patients with PsA, 14 (49%) of whom had severe dystrophic nail changes. In patients without PsA, 213 (73.1%) had nail involvement; 161 (55.3%) only had pitting and 52 (17.9%) showed severe dystrophic nail changes.

The most common clinical presentation of PsA was asymmetric polyarthropathy (elbow, knee, and hands) which was observed in 48.3% of the patients. Asymmetric polyarthropathy with spinal joint involvement (17.3%), symmetric arthropathy of distal interphalangeal (DIP) joints concomitant with severe dystrophic nail changes (13.9%), symmetric hip involvement (10.3%), cervical spine involvement (3.4%), and symmetric proximal interphalangeal (PIP) and DIP arthropathy were also observed in patients with PsA.

## Discussion

PsA is an inflammatory arthritis which can

**Table 1.** Frequency [number (percentage)] of the clinical types of psoriasis in the study population.

Type of psoriasis	Arthropathy		Total
	Present	Absent	
Chronic plaque	14 (48.2)	204 (70.1)	216 (67.5)
Unstable	5 (17.2)	36 (12.4)	41 (12.8)
Palmoplantar	8 (27.5)	23 (7.9)	31 (9.7)
Guttate	0 (0)	11 (3.8)	11 (3.4)
Scalp	0 (0)	9 (3.1)	9 (2.8)
Pustular	1 (3.4)	3 (1)	4 (1.3)
Erythrodermic	1 (3.4)	5 (1.7)	6 (1.8)
<b>Total</b>	<b>29 (100)</b>	<b>291 (100)</b>	<b>320 (100)</b>

affect a high percentage of patients with psoriasis. Although our knowledge about the pathophysiology of PsA has increased, the relationship between skin and joint lesions is not still clear. The exact relationships between onset, extent and distribution of the skin lesions, and the nature of joint involvement are of paramount importance.

The exact prevalence of PsA is unknown, and it is difficult to have estimates, partly because of the paucity of a widely-accepted classification or diagnostic criteria, and partly for failure in making a correct diagnosis.<sup>7,8</sup> The prevalence of PsA among patients with psoriasis varies from 6% to 42%.<sup>5</sup> It seems that studies on severe inpatient cases of psoriasis reported higher prevalence of PsA while its frequency among outpatient psoriatic patients has generally been estimated at 5 – 7%.<sup>9–11</sup> In our study, 9.1% of the patients had PsA, which is less than recent reports.<sup>2,12,13</sup> This may be due to the fact that our study population was relatively young (mean age of 36.2 years). We also found that patients with PsA were older than those without joint involvement, but this difference was not statistically significant. Therefore, it is possible that by studying older psoriatic patients, higher frequency of PsA would be observed.

PsA affects men and women almost equally.<sup>3,14,15</sup> In our study, there was no significant difference between the male and female psoriatic patients regarding joint involvement; however, the prevalence was slightly higher among men. Jajic and el-Assadi<sup>16</sup> also found a relatively higher prevalence of PsA in their male patients. On the other hand, it has been suggested that after the occurrence of PsA, men show less disease progression than women, and that PsA in women needs to be treated earlier to prevent articular damage.<sup>4</sup>

The most common type of psoriasis in our patients with PsA as well as the rest of the study population was chronic plaque psoriasis vulgaris. Psoriasis vulgaris has been shown to be the main form of psoriasis associated with PsA, but pustular psoriasis, flexural psoriasis, and guttate lesions have also been reported in PsA.<sup>13</sup> Nonetheless, in a recent study pustular psoriasis in patients with PsA was found to be very dominant.<sup>15</sup>

The relationship between severity of skin lesions and joint disease in PsA is a matter of controversy. Although it has been suggested that patients with PsA have more severe psoriasis,<sup>9,17</sup> some recent studies showed that there is no direct

association between the extent and severity of psoriasis and joint manifestations.<sup>13,18,19</sup> We found significantly higher PASI in our patients with PsA than those without joint involvement ( $24.33 \pm 10.36$  vs.  $10.70 \pm 8.44$ ).

Nail lesions occur more frequently in patients with PsA than those with uncomplicated psoriasis.<sup>20,21</sup> Accordingly, nail involvement was observed significantly more frequently in our patients with PsA than in those without PsA (96.5% vs. 73.1%). The prevalence of nail involvement in patients with PsA is not exactly known. Scarpa et al.<sup>21</sup> and Gladman et al.<sup>20</sup> found nail changes in 63% and 87% of their arthritic patients, respectively. In our study, almost all patients with PsA had nail changes. In another study, nail changes were observed in all patients with PsA.<sup>16</sup> Regardless of the discrepancy in the reported prevalence rates, nail changes in a patient with psoriasis should prompt us to investigate for articular disease.

Both psoriasis and PsA are highly heritable. Previous major population-based epidemiologic studies have revealed a substantially higher incidence of psoriasis in relatives compared with the general population.<sup>22</sup> Moll and Wright<sup>23</sup> noted a 19-fold increase in the prevalence of psoriasis among first-degree relatives of patients with PsA as compared with the general population. In our study, both patients with and without PsA showed a high prevalence of psoriasis in their relatives. Although the family history of psoriasis was observed more frequently in our patients with PsA, it was not significantly more frequent than psoriatic patients without PsA.

The classic clinical patterns of joint involvement in PsA include DIP joint disease pattern; oligoarticular pattern (less than five joints involved), which is usually asymmetric in distribution; polyarticular pattern (five or more joints involved), which is only symmetric in about half of the patients; arthritis mutilans, which is a very destructive form of arthritis; and spondyloarthritis, affecting the sacroiliac joints and the apophyseal joints of the spine. These patterns may be helpful in recognizing PsA early in the course of the disease. However, over time, there may be a change in pattern, and therefore the pattern at presentation is not particularly useful for classification.<sup>24,25</sup> In our study, asymmetric polyarthropathy was the most common clinical pattern of joint involvement. DIP joints were involved in 17.3% of our patients—less frequent than that

reported previously.<sup>19,26</sup>

In psoriasis, typically due to the earlier presentation of skin disease than joint disease, dermatologists can play a key role in identifying the onset of PsA. Dermatologists should normally be the first physicians to detect signs and symptoms of PsA and need to work closely with rheumatologists to establish the diagnosis and start the appropriate treatment which will address both the skin and the joint disease. Epidemiologic studies will be helpful in providing information for both specialties and efficient and effective care for both the skin and joint manifestations of this disease.

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