

## The frequency of musculoskeletal manifestations among psoriatic patients

A.I.Fouda, G.A.Hammad, R.M.Fawzy, A.I.El-Taweel and A.M.Shoshan

Rheumatology, Rehabilitation and Physical medicine Dept., Faculty of Medicine, Benha Univ., Benha, Egypt

E-Mail:asmashoshan@gmail.com

### Abstract

Background: psoriasis (Pso) is a prototype of Th1 proinflammatory cytokines mediated by an immunological dysfunction. It is usually seen as inflammatory skin disease with far-reaching systemic consequences of uncertain aetiology. There is increasing evidence of the seriousness of psoriatic skin disease as a significant danger of developing outbreaks of extracutaneous diseases and of the greater frequency of co-morbid illness linked with cardiometabolic dysfunction and Psoriatic Arthritis (PsA). Methods: 200 psoriatic patients were included in this research. Patients were split into two groups depending on whether there was bursitis or not. Patients were tested and examined in history. Results: Bursitis patients had a higher rate of psoriatic arthritis, enthesitis, heel condition, cardiovascular illness, serum higher uric acid, longer duration of psoriasis disease than bursitis-free group. Conclusions: Longer duration of psoriasis, leading to greater cardiovascular and musculoskeletal symptoms.

**Keywords:** Psoriasis, Psoriatic arthritis, Bursitis.

### 1. Introduction

Psoriasis (Pso) is a skin condition with immunological mediation that affects 1-3% of the general population [1]. There are many types include chronic plaque psoriasis, psoriasis, reverse psoriasis and guttate psoriasis. There are several forms. The most prevalent form of chronic plaque psoriasis is found in more than 90 percent of Pso patients [2]. Pso precedes the diagnosis of psoriatic arthritis (PsA) in 75% of individuals [3]. The incidence of Pso varies by geography, usually in regions farther away from the equator [4].

Early diagnosis and administration of disease modifying antirheumatic medication have demonstrated an effect on long-term morbidity similar to individuals with rheumatoid arthritis [5]. However, the delay in the diagnosis of PsA continues to contribute significantly to poor patient results. Therefore, early diagnosis of PsA patients in patients with psoriasis is of significant significance. Patients with psoriasis are often treated by general practitioners or dermatologists who may either depend on self-reported common symptoms to diagnose PsA or be more proactive in the elucidation of suitable symptoms and signs of the musculoskeletal system (MSK). Both methods have problems when patients fail to understand their symptoms' significance and time limitations to general practitioners and dermatologists that impede proper evaluation [6].

Bursitis is a painful disease that affects tiny bags called bursae, which cushion the bones, tendons and muscles close to the joints. Bursitis happens when the bursae becomes swollen.

This research was designed to investigate the incidence of bursitis in psoriasis patients.

### 2. Patients and methods

This is observational cross sectional study, conducted at Benha University hospital and in the period from December 2019 to April 2021, it included 200 psoriatic patients. Patients were divided into two groups according to the presence or absence of bursitis detected by clinical examination.

### 2.1. Key inclusion criteria

Patients of both genders with psoriasis which is defined as presence of salmon colored hyperkeratotic scaling plaques commonly located on extensor surface most commonly on the knees, elbows, trunk and scalp. However, occult psoriasis can be present in the external auditory canal, umbilicus, intergluteal cleft and axilla. Typical nail changes include pitting, onycholysis, leukonychia, nail plate crumbling, oil drop discoloration, nail bed hyperkeratosis, splinter hemorrhages and red spot in the lunula itchy scaly patches.

All patients were subjected to full medical history and examination, lab parameters including admission complete blood count, erythrocyte sedimentation rate 1<sup>st</sup> hour, C-reactive protein, serum uric acid, SGPT, SGOT, Blood urea and serum creatinine.

### 3. Results

This study included 200 psoriatic patients. The patients were divided into two groups according to presence or absence of bursitis. In both groups. Patients with bursitis (n = 16) were 8 females with mean age of  $50.14 \pm 10.10$  years while psoriatic patients without bursitis (n = 184), they were 123 females with mean age of  $46.7 \pm 7.6$  years.

**Bursitis** was present in 16(8.0%) patients, out of them 5 (31.25%) patients complained of scapulothoracic bursitis, 3(18.75%) patients had olecranon bursitis, 3(18.75%) patients had prepatellar bursitis, 2(12.5%) patients had trochanteric bursitis, 2(12.5%) patients had retrocalcaneal bursitis, 1(6.25%) patient at the base of the big toe.

Regarding laboratory parameters; Hemoglobin%, Erythrocyte sedimentation rate 1<sup>st</sup> hour, C- reactive protein, Serum uric acid and Blood urea showed statistically significant difference between the two groups Table (2).

The duration of psoriasis was higher in patients with bursitis than those without bursitis with statistically significant difference ( $p < 0.001$ ).

**Table (1)** comparison between the studied groups as regard demographic data

Variable	Group with bursitis (N=16)	Group without bursitis (N=184)	Test	P value
<b>Mean ±SD</b>				
Age (years)	50.14±10.10	46.7±7.6	St t = 1.7	0.092
<b>Number (%)</b>				
Sex	Male	8(50)	$\chi^2 = 1.85$	0.174
	Female	8(50)		
	Total	16(100)	184(100)	
	no	16(100)	181(98.4)	

**Table (2)** Laboratory parameters of the studied patients

Variable	Group with bursitis (N=16)	Group without bursitis(N=184)	St t Test	p Value
	Mean ±SD	Mean ±SD		
HB (gm/dl)	13.98±1.6	11.96±1.43	5.3	<0.001**
WBCs (10 <sup>3</sup> / $\mu$ L)	8.3±4.36	7.1±2.7	1.68	0.094
PLT(10 <sup>3</sup> / $\mu$ L)	323.25±108.1	304.24±83.9	0.84	0.397
ESR 1 <sup>st</sup> hr (mm/h)	25.43±34.1	13.52±19.8	2.15	0.033*
C-reactive protein(mg/L)	6±3.66	4.13±3.29	2.15	0.032*
S. Uric acid(mg/dl)	6.56±1.04	4.4±0.915	8.88	<0.001**
SGPT(ul/L)	24±8.07	24.47±8.8	0.21	0.834
SGOT(ul/L)	24.06±5.6	24.6±7.67	0.275	0.783
Bl. Urea (mg/dl)	35.75±11.38	24.99±7.2	5.4	<0.001**
S. creatinine (mg/dl)	0.95±0.258	0.89±0.15	1.5	0.127

**Hb**= Haemoglobin concentration; **WBCs**= White blood cells; **PLT**= Platelet count; **ESR 1st h**= erythrocyte sedimentation rate first hour; **SGPT**= Serum glutamate pyruvic transaminase; **SGOT**= serum glutamic oxaloacetic transaminase; **S. Creatinine**= serum Creatinine.

**Table(3)** comparison between the studied patients regarding duration of psoriasis

Variable	Group with bursitis (N=16)	Group without bursitis(N=184)	St t Test	p Value
	Mean±SD	Mean ±SD		
Duration of psoriasis (years)	27.3±1.84	13.87±9.8	4.5	<0.001**

#### 4. Discussion

Our knowledge of psoriasis aetiology changes quickly and the conventional notion that it is a skin-restricted illness remains disputed. In fact, it is clear that the incidence of comorbid illness is greater among psoriasis patients. The increased emphasis given to assessing related comorbidity beyond the cutaneous manifestations of the illness is shown by the more significant involvement of systemic inflammation in psoriasis. Patients with psoriasis may be complicated by psoriatic arthritis (PsA), a chronic spondyloarthritis-inflammatory disease [7]. However, many bursae are frequently inconstant, tiny and little recorded and thus the participation of specialist physicians cannot readily be identified [8].

[9] Reported bursitis in a 60-year-old man with psoriasis vulgaris for 15 years, which was linked to psoriatic arthritis. Physical examination showed a painful cyst in its right elbow extension and in its knee joints swelling. The imagery revealed olecranal bursitis and suprapatellar bursitis in the closure site, with enthesitis. This is the first PsA report in China on olecranal and suprapatellar bursitis.

Also in [10] an irritated retrocalcaneal bursa and Achilles tendonitis were observed in ultrasound arthritis

In our research, ESR 1st hour mean, CRP and Serum uric acid were much higher than in the control group in psoriatic patients, agreeing with the same differences with [11] and [12]. [13] the same difference

was observed exclusively with respect to serum uric acid. [14] only the same differences were observed with respect to the CRP level.

#### 4. Finding

The existence of bursitis is linked to a prolonged psoriasis phase; therefore patients must be regularly checked for its occurrence.

#### 5. Limitations

Bursitis was only diagnosed with clinical examination and we suggest using other methods such as musculoskeletal ultrasound. The US review corroborated the physical exam, which further enabled a wide study of the bursa's anatomy, size and vascular changes. In addition, the US was more sensitive than a clinical examination in the detection of this bursa's subclinical involvement in individuals with PsA.

#### References

- [1] L.Eder, J.Widdifield, CF.Rosen. Trends in the prevalence and incidence of psoriasis and psoriatic arthritis in ontario, canada: A population-based study. *Arthritis Care Res (Hoboken)*.vol.71,pp.1084-91,2019.
- [2] 2.Menter, Alan, Catherine Smith. *Fast Facts: Psoriasis*. Abingdon: Health.vol.16,pp.120-150,2008.
- [3] CT.Ritchlin, RA.Colbert and DD.Gladman. Psoriatic arthritis. *N Engl J* .vol.376,pp.2095-6,2017.
- [4] V.Chandran, SP.Raychaudhuri.Geoepidemiology and environmental factors of psoriasis and psoriatic arthritis, *J Autoimmun*.34(3),pp.314–21,2010.
- [5] DD.Gladman, A.Thavaneswaran, V.Chandran. Do patients with psoriatic arthritis who present early fare better than those presenting later in the disease? *Ann Rheum Dis*.vol.70,pp.2152–4,2011.
- [6] M.Haroon, B.Kirby and O.FitzGerald: High prevalence of psoriatic arthritis in patients with severe psoriasis with suboptimal performance of screening questionnaires, *Ann Rheum Dis*.vol.72(5),pp.736–40,2013.
- [7] DD.Gladman.Current concepts in psoriatic arthritis. *Current Opinion in Rheumatology*.vol.14(4),pp.361-6,2002.
- [8] I.Olivieri, E.Scarano, G.Ciancio. Involvement of an inconstant bursa under the head of the second metatarsal bone in spondyloarthritis. *Clinical Rheumatology*.vol.23(1),pp.93–94,2004.
- [9] LN.Qu and FR.Zhang: Acase of bursitis related to psoriatic arthritis, [http://www.researchgate.net/publication\\_A\\_case\\_of\\_bursitis\\_related\\_to\\_psoriatic\\_arthritis](http://www.researchgate.net/publication_A_case_of_bursitis_related_to_psoriatic_arthritis).vol.50,pp.890-900,2009.
- [10] PV.Balint and RD.Sturrock: inflamed retrocalcaneal bursa and Achillis tendonitis in psoriatic arthritis demonstrated by ultrasonography: *Annals of rheumatic diseases*.vol.59(12),pp.931-3,2001.
- [11] Nadeem Mir, Tbinda Ayub Shah, Aqip Hassan Dar.Hyperuricemia and Serum ADA levels in psoriasis and their correlation to severity of disease. *International Journal of Contemporary Med Research*.vol. 6 (9),pp.2454-7379,2019.
- [12] MA.Elsaied, YM.Moustafa, RA.Elsayed.evaluation of serum adenosine deaminase and inflammatory markers in psoriatic patients. *Indian Journal of dermatology*.vol.64(3),pp.207-12,2019.
- [13] Zhang Ying, Liu Liu, Xiaoying Sun.: Updated evidence of the association between elevated serum uric acid level and psoriasis. *Front Med (Lausanne)*.vol.8,pp.645-550,2021.
- [14] N.El Shaarawy, B.Elnady, NM.Dawoud. Subclinical synovitis and enthesitis in psoriasis patients and controls by ultrasonography in Saudi Arabia; incidence of psoriatic arthritis during two years. *Clin Rheumatol*.vol.13,pp.175-178, 2016.