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CLINICAL PATTERNS OF PSORIATIC ARTHROPATHY IN MOSUL, IRAQ

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ABSTRACT

Background: There are regional variations in the clinical and medical presentation and characteristics of psoriatic arthritis (PsA). The polyarticular form has superseded the oligoarticular type, which was thought to be the most prevalent. **Aim:** This study is designed to know the clinical characeristics and distributions of psoriatic arthritis in Mosul city. **Methodology:** A case series research conducted in a hospital with fifty PsA patients over a six-month period. The Psoriatic Area as well as Severity Index (PASI) was used to determine the skin's severity. The CASPAR criteria for PsA were used to diagnose PsA. The Moll and Wright categorization criteria were used to categorize the quantity and arrangement of inflamed and sensitive joints. **Results:** PsA began at an average age around forty years. In 44 (88%) of the patients, the cutaneous involvement happened before the joint involvement; in only two, they co-occurred; and in 4 (8%), the PsA came before the skin involvement. 35 individuals (or 70%) had symmetrical polyarthritis, which was the most common clinical manifestation. Among all the patients, plaque-type psoriasis was the most prevalent clinical form. Thirty-five individuals (about 70%) had nail involvement as a result of psoriasis. Pitting was the most frequently seen nail alteration, occurring in 26 (52%) of the individuals. **Conclusion:** various regions of the world have various PsA clinical patterns. The most prevalent kind of polyarthritis is now symmetrical.

KEYWORDS: Arthropathy, Clinical Presentation, Psoriasis.

INTRODUCTION

Psoriasis is a chronic, inflammatory skin disorder primarily affecting the skin, nails, and joints. Psoriatic arthritis, a member of spondyloarthropathy, is an inflammatory arthropathy associated with psoriasis and usually negative for rheumatoid factor. PsA is one of the most common forms of spondyloarthritis worldwide, usually following the diagnosis of psoriasis by about ten years. In 15% of patients, arthritis and psoriasis begin simultaneously, and an additional 15%, arthritis precedes psoriasis by as long as 15 years.[1,2]

The onset of psoriasis can occur at any age, but it most frequently peaks in the twenties. There is no gender predilection, but a genetic predisposition has been noted. PsA develops in 7-42% of patients, with a prevalence reported in Indian patients at 8.7%.[3,4] The disease begins as a complex of genetic and environmental factors. When skin disease precedes arthritis, inflammation damages keratinocytes, leading to the triggering of interferon-gamma, activating dermal dendritic cells that migrate to local lymph nodes. Th1 and Th17 cells differentiate and proliferate, releasing inflammatory cytokines that perpetuate the cycle of tissue damage and inflammation. CD8+ T cells are also thought to be necessary in the synovial fluid of patients with PsA.[3-5]

Plaque psoriasis is the most common skin phenotype in patients with PsA, but other patterns may be seen. Joint inflammation is common in patients with PsA, including stiffness after rest and fatigue. To meet the CASPAR criteria, features typical of PsA, including dactylitis and enthesitis, are helpful in diagnosis.[6,7]

Aims of the study

This study is designed to describe the medical arrangements of patients suffering from Psoriatic Arthritis who lived in Mosul City.

METHODOLOGY

Research design, Location and Period of study

Case-series analysis had been conducted on a model of fifty cases who were treated in the rheumatology ward and outpatients of the Ibn-Sina Teaching Hospital between September 2020 and March 2021 and were identified as PsA based on "CASPAR criteria".[8]

Ethical issue

Verbal agreement was acquired from all participants prior to data collection, following an explanation of the study's aim and privacy measures.

Exclusion criteria

- Expectant women (because of the risk of x-rays).
- Every patient who declines to take part in the study.

Data collection

A sheet containing a questionnaire was used to collect the data. The questionnaire asked about name, age, gender, education, marital status, and medical information such as a family history, a comprehensive medical history of the commencement of psoriasis and psoriatic arthritis, the manner of initiation, and the freqeuncy and characteristics of swollen as well as tender joints, which were calculated and categorized according to "Moll and Wright's classification criteria" as previously mentioned.[1]

When a patient with inflammatory back pain had at least one of the following symptoms:

- Axial involvement was identified. Sensitivity in the sacroiliac joint or spine.
- Sacroilliatis on the pelvic x-ray (A-P view).
- Spinal x-ray showing spinal syndesmophytes.

Clinical diagnosis of enthesitis at the entheseal location was made based on the occurrence of pain, soreness, and occasionally enlargement. The appearance of spontaneous fusiform swelling and/or toes that outspread over the joint line are clinical indicators of Dactylitis. Based on the PASI score, the category of skin psoriasis was determined, and the severity of the condition was recorded. The existence of pitting, onycholysis, and destructive alterations in the nails was evaluated. All patients had X-ray films taken of the affected joints; the radiology institute used a device/care stream D.R., Ascend 2019, Q5-550, to take the images. The typical range for ESR measurement is 10 mm/hour for men and 15 mm/hour for women. A U.K.-made latex test kit was used to quantify the CRP (standard range up to 6 mg/l).

Statistical work and analysis

The data were imported into Minitab version 18, a statistical application, and the difference between the categorical data was estimated using the Chi-square test. A p-value of less than 0.05 is deemed significant.

RESULTS

Between September 2020 and March 2021, a total of fifty PsA patients visited the Ibn-Sina Teaching Hospital's rheumatology ward and outpatient clinic. Of them, with a mean age of 40.4± 12.5 years, 25 were male and 25 were female. Psoriasis lasted an average of 12.6 ± 7.6 years, while PsA lasted an average of 6.2 ± 4.3 years. 17 (34%) of the patients had a family history of psoriasis.

Table 1: Individual characteristics of psoriatic arthropathy patients.

Parameters		**Mean ± SD**	**Range**
Age (years)		40.4 ± 12.5	19.0 – 65.0
Duration in years of cutaneous psoriasis		12.6 ± 7.6	1.0 – 40.0
Duration in years of joint association		6.2 ± 4.3	1.0 – 20.8
		No.	**%**
Sex	Men	25	50.0
	Women	25	50.0
Familial history of Psoriasis		17	34.0
Total		50	100.0

Marital status and educational levels of psoriatic arthropathy patients were deomnstated in table (2) and showed that 76.0% were married and 36.0% had secondary school level.

Table 2: Marital status and educational levels of psoriatic arthropathy patients, Mosul 2020.

Items		**No.**	**%**
Marital status	Single	9	18.0
	Married	38	76.0
	Widow	2	4.0
	Divorced	1	2.0
Education	Illiterates	3	6.0
	Primary level	12	24.0
	Secondary level	18	36.0
	University level *	17	34.0
Total		50	100.0

In 44 (88%) individuals, the cutaneous involvement happened 13 years on average before the joint involvement; in 2 (4% of patients), they coincided, and in 4 (8% of patients), PsA came first. 35 individuals, or 70% of the total, had symmetrical polyarthritis, which was the most prevalent clinical form. In this group were patients with symmetrical polyarthritis with spondylitis in 7(14%) cases and isolated symmetrical polyarthritis in 28(56%) cases. Of the residual patients, 3(6%) had primarily DIP, 2(4%) had oligoarthritis with spondylitis, 9(18%) had asymmetrical oligoarthritis, and 3(6%) had isolated spondylitis. Figure (1) only two patients had dactylitis.

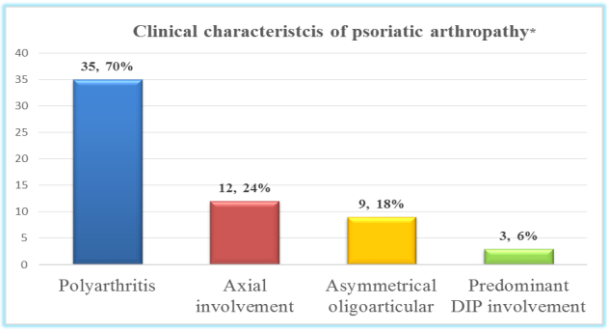

Figure 1: Clinical characteristics of cases with psoriatic arthropathy.

Psoriasis-related nail involvement was seen in 35(70%) of the individuals. As indicated in table (3), nail alterations comprised pitting in 26(52%) of cases while the onycholysis in 5(10%) cases, meanwhile the destruction found in only 4(8%).

Table 3: The fractions of nail alterations in cases with psoriatic arthropathy.

Nail changes		No.	%
Yes* 35(70.0%)	Pitting	26	52.0
	Onycholysis	5	10.0
	Destruction	4	8.0
No nail changes		15	30.0
Total		50	100.0

The figure (2) showed that in fifteen patients (30%) there was enthesitis.

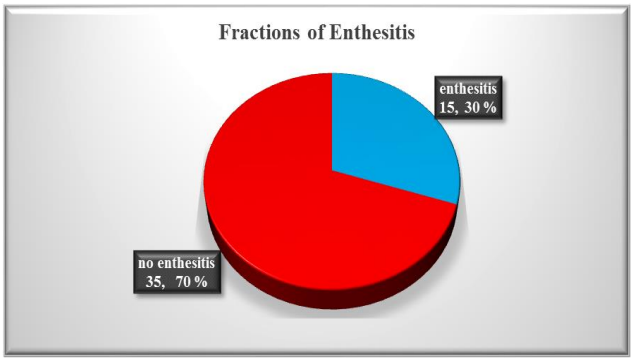

Figure 2: Fractions of enthesitis in patients with psoriatic arthropathy.

As indicated by table (4), the Achilles tendon is the most often involved location, then by the humerus in its lateral epicondyle as well as plantar fasciitis.

Table 4: The location of enthesitis in patients with psoriatic arthropathy.

Location of enthesitis	No.	%
Achill's tendon insertion at the calcaneus	8	53.3
At lateral epicondyle of humerus	5	33.3
Planter fascia	2	13.3
Total	15	100.0

Among all the patients, plaque-type psoriasis was the most common clinical form. Table (5) presented the mean PASI score as well as ESR.

Table 5: The mean PASI score as well as ESR.

Parameters	Mean ± SD	Range
PASI score	6.6 ± 4.6	2.1 – 19.8
ESR	22.4 ± 12.4	5.0 – 50.0

The PASI score was used to determine the severity of psoriasis, as shown in figure (3).

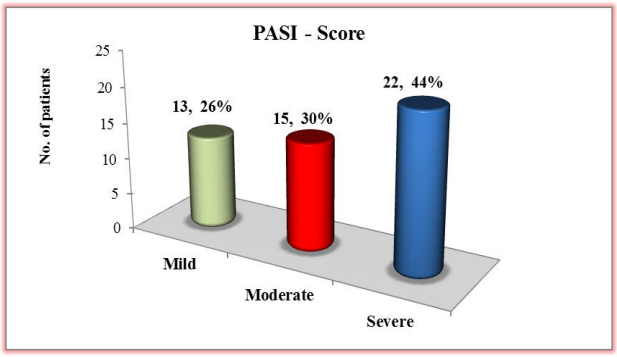

Figure 3: The relation psoriasis severity with PASI score.

Atypical X-ray outcomes were seen in 17(34%) cases. (Figure 4)

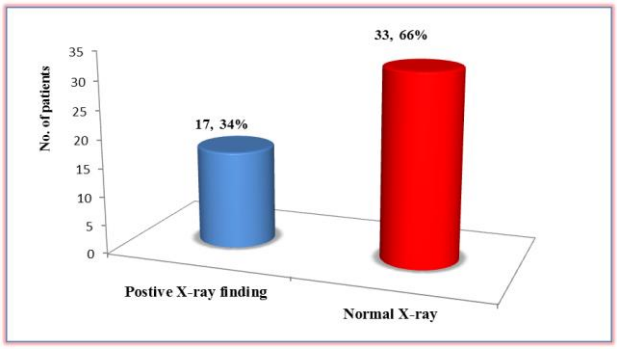

Figure 4: The fractions of positive X-ray outcomes.

The type of X-ray finding illustrated in (table 6).

Table 6: The types of X-ray findings in patients with psoriatic arthropathy.

X-ray finding [n = 17] *	No.	%
Narrow joint	11	64.7
Erosion	9	52.9
Periosteal reaction	6	35.3
Osteopenia	4	23.5
Sclerosing and ankylosis	4	23.5

The length of cutaneous psoriasis did not significantly correlate with radiological results (Table 7).

Table 7: The relationship between duration of skin psoriasis and radiological finding.

X-ray	Duration of skin psoriasis (years)				P-value*
	< 10		≥ 10		
	No.	%	No.	%	
Positive	4	22.2	13	40.6	0.187
Normal	14	77.8	19	59.4	
Total	18	100.0	32	100.0	---

*** Chi-square test was used.**

Furthermore, there was no discernible correlation between the radiological results and the length of joint involvement. (Refer to Table 8).

Table 8: The relationship of duration of joint association with radiological outcomes.

X-ray	Duration of joint association (years)				P-value*
	< 10		≥ 10		
	No.	%	No.	%	
Positive	13	33.3	4	36.4	0.851
Normal	26	66.7	7	63.6	
Total	39	100.0	11	100.0	---

*** Chi-square test was used.**

DISCUSSION

As an inflammatory arthropathy interconnected to psoriasis and often negative for rheumatoid cause, psoriatic arthritis belongs to the spondyloarthropathy group.[9] The average age at which PsA manifested itself in the current work was around forty years; this outcome was consistent with that of Rather et al., who discovered similar ages at start (30–40 years) in seventy percent of their cases.[10] Regarding the sex distribution, PsA influencd males and females at a rate that is comparable to that of Rather et al.'s investigations, which revealed a 2:1 ratio between men and women.[10] Gender incidence among Caucasians is roughly equal, according to previous research.[11]

The current study found that 17 (or 34%) of the patients had a family history of psoriasis. This finding differs from that of Rather et al.,[10] who reported that 6% of the patients they studied had a family history of the disease, and Farber et al.,[12] who reported that 36% of their patients had a familial occurrence, which is consistent with our findings.

In our study, cutaneous association developed prior to joint disease in 44(88%) of the cases (a difference of thirteen years); in contrast, they co-occurred in only two of the cases, and in 4(8%) of the patients, PsA developed before the skin. Our findings concurred with those of Rather et al., who discovered that in 75% of cases, cutaneous involvement happened before joint involvement at a mean interval of 7 years, whereas in 20% of cases, they co-occurred and in 10% of cases, the PsA happened before the skin association at a mean of 3.5 years interval.[10] Alternatively, according to Rajendran et al., joint symptoms appear in 50.8% of cases after skin lesions appear, 12.1% before, and 37% at the same time.[3]

According to the current investigation, chronic type of plaque psoriasis was the frequent kind of psoriasis and affected every patient; this finding was consistent with that of Rather et al., who discovered that chronic plaque psoriasis affected 81% of patients.[10]

The degree of PsA and skin illness did not significantly correlate. This was consistent with the research conducted by Kumar et al., which demonstrated no correlation between the severity of an arthritis and the severity of a skin condition.[4]

Moreover, Gottlieb et al. discovered that there was no correlation between baseline markers of skin and joint disease in a noteworthy phase 4 clinical study involving 1122 patients.[13]

The furthermost prevalent nail alteration was nail pitting, it was discovered in 52% of the psoriatic patients with concomitant PsA. Nail involvement was more common in these individuals, having been detected in 35(70%)). This is consistent with research conducted by Kumar et al.,[4] who found that 87% of the study group's participants had altered nails, with pitting (59%), onycholysis (54%) and other less frequent nail abnormalities seen.

Among the patients, symmetrical polyarthritis was the most prevalent clinical kind, accounting for 35 cases (70%). This will be consistent with the research conducted by Rather et al.,[10] which discovered that the most prevalent variety of polyarthritis is symmetrical. However, Prasad et al. discovered that 42–67% of patients had asymmetrical oligoarthritis, the maximum prevalent kind of PsA.[11] A long-standing cutaneous condition in our patients (mean illness duration of 12.6 years) may be the cause of symmetrical polyarthritis.

Patients with short disease durations are more likely to have oligoarthritis, whereas those with longer disease durations are more likely to have polyarthritis. As noted by Jones et al.,[14] the illness pattern will alter over time as a result of both the disease's progression and its response to therapy.

In the current study, 3(6%) of the patients had isolated spondylitis, whereas 7(14%) and 2(4%) of the patients had spondylitis with symmetrical polyarthritis and 2(4%) of the patients had spondylitis with symmetrical oligoarthritis, with predominant DIP seen in 3(6%) of the patients. This outcome is consistent with the research noted by Rather et al.[10]

The key to diagnosing PsA is enthesitis, or inflammation of the entheses, the places where tendons or ligaments enter into the bone. Thirty percent of the patients in the present research had enthesitis. Two individuals had

dactylitis, which was brought on by the use of tumour necrosis factor inhibitors.[15] This indicates the effectiveness of this treatment for dactylitis.

About 34% of patients had abnormal x-ray results. The length of skin psoriasis and radiological results in our study do not significantly correlate (p=0.187). Furthermore, there was no discernible connection between the radiological results and the length of joint involvement.

The least frequent clinical form of PsA is called arthritis mutilans, in which the patient first exhibits significant joint inflammation that progresses quickly and eventually destroys the joints, resulting in irreversible deformity. Osteolysis causes the distressed joints to becoming softer, shorter over time, and more extensive. We did not see arthritis mutilans in our investigation. Our study's limited sample size and high standard deviations are two of its drawbacks.

CONCLUSION

Globally, there are differences in the clinical form of PsA. Despite the fact that the asymmetric oligoarticular type was formerly was the utmost widespread kind, the even polyarthritis is now the most recognized variety.

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