



CLINICAL AND RADIOLOGICAL STUDY OF PSORIATIC ARTHRITIS IN A TERTIARY CARE HOSPITAL

Dermatology

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ABSTRACT

Introduction: Psoriatic Arthritis (PA) is an autoimmune inflammatory disease involving ligaments, tendons, fascia and spinal and/or peripheral joints in association with or without psoriasis of the skin and/or nails. This study done to determine the natural course, clinical presentation and radiological findings of the disease. **Objective:** To ascertain the incidence of Psoriatic arthritis, analyse the different clinical manifestations of PA and to evaluate the clinical and radiological correlation in patients. **Materials and Methods:** This was a non-interventional, cross-sectional study comprised of 12 patients of PA. In all patients, detailed clinical history was taken followed by clinical and radiological examination were done depending on the joint involved. **Results:** Out of the total attendance of 5801 new patients attended, 224 patients had psoriasis (5.35%), there were 12 cases of PA detected, thus accounting for 0.21%. Out of the 12 patients of PA, there were 8 males and 4 females. The male to female ratio was found to be 2: 1. The mean age was 40 years. The joints involved were Proximal inter-phalangeal joints of hands in 7 patients (58.34%), Distal inter-phalangeal joints of hands in 3 patients (25%), Knee joint and ankle joint in each one patient respectively (8.33%). Majority of the patients on radiographic films, revealed bony erosions, narrowing of joint spaces, minimal periosteal reaction. One case revealed osteoporosis and fusion of PIP-joints. Five cases didn't reveal any abnormal radiological features. **Conclusion:** This study confirms that PA is a chronic, progressive disease in the majority of patients. Despite clinical improvement with current DMARD treatment, PA results in radiological damage.

KEYWORDS

Psoriasis, Arthritis, Periosteal reaction, Osteoporosis.

INTRODUCTION:

Psoriatic Arthritis (PA) is an auto-immune inflammatory disease involving ligaments, tendons, fascia and spinal and/or peripheral joints in association with or without psoriasis of the skin and/or nails⁽¹⁾. It is classified as a sero-negative spondyloarthropathy usually with a negative serological test for rheumatoid factor⁽²⁾. The occurrence of arthritis in association with psoriasis was first recognized in 1818 by ALIBERT and was designated 'psoriasis arthritique' by Bazin in 1860⁽³⁾. The prevalence of psoriasis has been estimated at 1.5-3% in western Europe. However, 2.6-7% of patients with polyarthritis also had psoriasis⁽⁴⁾. Furthermore, while the incidence of psoriasis in subjects with rheumatoid factor positive polyarthritis was found to be about 2% it was four times higher in those with sero-negative polyarthritis. A clinical and radiological study of psoriatic arthritis has been undertaken to ascertain the incidence and analyse the different clinical and radiological manifestations of Psoriatic Arthritis.

AIM:

1. To ascertain the incidence of Psoriatic Arthritis.
2. To analyse the different clinical manifestations of Psoriatic Arthritis.
3. To record their radiological manifestations.
4. To evaluate the clinical and radiological correlation.

MATERIALS AND METHODS

The present study was a non-interventional, cross-sectional study conducted in tertiary care Hospital comprised of 12 patients PA. All confirmed (old and new) cases of PA with clinical manifestations irrespective of age, sex, duration of illness and associated diseases and who are willing to participate in the study were included. All the patients with conditions mimicking PA. viz., Rheumatoid arthritis, ankylosing spondylitis, post-traumatic arthritis, Osteo-arthritis, Reiters disease, anterior chest wall pain syndrome of sterno-manubrial or Costo-clavicular involvement associated with Pustulosis palmaris at plantaris and recurrent multifocal osteomyelitis were excluded by their relevant clinical, radiological and other laboratory investigations.

In all patients, detailed clinical history was taken followed by clinical examination. Routine urine analysis, hemogram and Serum rheumatoid factor, Relevant skiagram were done depending on the joint involved.

OBSERVATIONS AND RESULTS

Out of the total attendance of 5801 new patients attended there were 224 patients of all varieties of psoriasis accounting to prevalence rate of 5.35%, out of them there were 12 cases of PA detected, thus accounting for 0.21% of all dermatological patients. [Table-1]

Table-1: Prevalence and Incidence of Psoriatic Arthritis

Total no. of patients attended Dermatology department	5801
Total no. of psoriasis cases	224
No. Of cases of PA	12
Percentage of prevalence of PA	5.35%
Percentage of incidence of PA	0.21%

Out of the 12 patients of PA, there were 8 males and 4 females. The male to female ratio was found to be 2:1 showing male preponderance. As shown in Table-2 Majority of the patients were seen between 40-70 years of age with a peak incidence in the fifth decade of life. The youngest patient was 10 years old child and oldest patient was a 70-year-old adult. The mean age was 40 years. Rheumatoid factor: In the present study, estimation of serum rheumatoid factor was done in all cases and was found to be negative. Table -3,4 Shows the type of the joints involved in PA and are mostly of proximal interphalangeal joints followed by distal interphalangeal joints of hands of which rheumatoid type is most commonly observed. Soft tissue swellings of affected joint were the most common observed radiological manifestation followed by narrowing of joint space and bony erosions [Fig-1,2,3]. One case revealed osteoporosis and fusion of PIP-joints. Five cases didn't reveal any abnormal radiological features



Figure-1 showing involvement of PIP joints of both hands with clinical psoriatic lesions



Figure-2 showing sausage shaped swellings of DIP joint of left ring finger and right middle finger



Figure-3 showing soft tissue swelling of right middle finger with narrowing of joint space

Table-2: Age and Sex distribution

Age in years (Percentage)	Male	Female	No. of patients
0-10 (8.33%)	1	-	1
11-20 (8.33%)	1	-	1
21-30 (25%)	1	2	3
31-40 (8.33%)	1	-	1
41-50 (16.66%)	-	2	2
51 and above (33.33%)	4	-	4

Table-3: Clinical Involvement of Type of The Joints In 12 Cases of Psoriatic Arthritis

Sl no	Type of joints involved	No.of patients	Percentage
1	Proximal interphalangeal joints of hands	7	58.34%
2	Distal interphalangeal joints of hands	3	25%
3	Knee joint	1	8.33%
4	Ankle joint	1	8.33%
	Total	12	100%

Table-4 Clinical And Radiological Manifestation Respectively In All 12 - Cases Under Study

Case No.	Site of joint involvement	Clinical Type	Radiological Manifestation
1	DIP joint Of Right hand	DIP Joint type	Soft tissue Swelling of affected Joint
2	PIP joint of Right hand	Rheumatoid Type	1) Soft tissue swelling of middle finger. 2) Narrowing of interphalangeal joint space
3	PIP joint Of Right hand	Rheumatoid Type	Mild of tissue swelling of right finger with periosteal reaction
4	PIP joint Of Right hand	Rheumatoid Type	1) Soft tissue swelling of right ring finger and middle finger 2) bone shows evidence of osteoporosis, cortical thickening of middle phalanx of right ring finger with fusion of PIP joints.
5	Ankle Joint	Peripheral mono articular type	Bony erosive changes in all the bones of left foot especially the cuboid cuneiform and calcaneum, Ossified calcaneal spur and the tendo Achilles
6 and 7	PIP joint Of Both hands	Rheumatoid type	1) Soft tissue Swelling of PIP joint. 2) Joint space is normal 3) no evidence of Bony lesions

8	Right knee joint	Mono articular type	No evidence of Bony or arthritic changes noted
9 and 10	DIP Joints of both hands	DIP type	No evidence of Bony or arthritic changes noted
11 and 12	PIP joint of right hand	DIP type	No evidence of Bony /arthritic changes noted

DISCUSSION

In the present study, prevalence of PA was found to be 5.35% which was similar to R.S. Stern, T. Nijsten, S.R. Feldman, et al. study where they observed that the prevalence of psoriasis in patient with seronegative Rheumatoid arthritis was 4-6%.⁽⁵⁾

In this study, no age and sex were found to be immune from development of PA and found to be occurring in nearly all age groups. The youngest patient seen was a 10 year old child and the oldest was a 70 year old adult. In the present study, nearly 68.3% of the patients were found to be above 40 years of age with a peak incidence in fifth decade showing that PA predominantly affects adults. In the present study, sex incidence was found to be Male:Female 2:1 showing male preponderance. Wright and Jajic and el-Assadi⁽⁶⁾ and some Indian studies⁽⁷⁾ have reported similar findings while Nigam et al.⁽⁸⁾ have reported a female preponderance. The onset of illness in most of the cases, was insidious. In one case, onset of arthritis with generalised erythroderma and constitutional disturbances including fever with chills, headache and malaise was abrupt. All the remaining 11 cases showed insidious onset of PA without constitutional disturbances.

In the present study, all patients of PA developed cutaneous psoriasis first, followed by appearance of arthritis. Similar observations have been made in various studies from other parts of the world⁽⁹⁾. The predominant pattern of joint involvement was found to be proximal interphalangeal joints (58.34%); distal inter-phalangeal joints (25.0%) and one each of knee and ankle joints (8.33%). similar findings were seen in Kumar R, Sharma A et al study⁽¹⁰⁾. S. P. Ray Chaudhary et al⁽¹¹⁾ observed that polyarticular type similar to that of rheumatoid arthritis was commonest involvement affecting large and small joints especially small joints of hands and feet. The anatomical sites of involvement were of PIP-65% and DIP-35%. Nail Changes: Three patients showed associated nail pitting, thickening and subungual hyperkeratosis similar to observations of S. P. Ray chaudhary et al⁽¹¹⁾

Rheumatoid factor: In the present study, estimation of serum rheumatoid factor was done in all cases and was found to be negative. This was the most consistent laboratory finding seen in all patients, suggesting seronegative PA. similar observations were noted in shaw et al study⁽¹²⁾. Erythrocyte sedimentation rate was found to be increased in five Cases and a non-specific anemia was observed in 4 cases.

Radiological Study: In the present study, Skiagram were done in all cases. Six cases showed soft tissue swelling of affected joints, out of which one case revealed periosteal reaction. Another case revealed narrowing of joint space in right proximal inter-phalangeal joint. Another case revealed the evidence of osteoporosis and cortical thickening of middle phalanx of right ring finger with fusion of PIP joints. One case of left ankle joint revealed bony erosive changes in all the bones of the foot especially the cuboid, cuneiforms and calcaneum. Ossified calcaneal spur and tendo-achillis. Five cases didn't show any radiological manifestation. Similar observations had also been made in other studies^(13,14). S. P Ray chaudhary, et al⁽¹¹⁾ observed the proliferation of bone at the base of distal phalanx

In most patients with PA, the musculoskeletal manifestations were relatively well tolerated and were of mild nature. several patterns of disease were evident. For most the arthritis waxed and waned in severity and there were often long symptom free-periods. Mild but troublesome symptoms were observed in one case with foot pain involving recurrent enthesopathy form tendinitis involving tendo-achillis.

Limitations: This was a cross-sectional study with a relatively small sample size. Longitudinal follow-up of large number of patients will provide us more information regarding the changing pattern of PA and the relationship between the site and type of skin involvement with articular disease.

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