

Original Article

Prevalence of Psoriatic Arthritis among Patients with Arthritis: Insights from a Tertiary Rheumatology Clinic in Bangladesh

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Abstract

Background: Psoriatic Arthritis (PsA) is a complex seronegative inflammatory arthritis associated with psoriasis, characterized by a wide range of clinical manifestations. This study aimed to explore the prevalence of PsA in arthritic patients along with associated demographic and clinical characteristics in a tertiary care setting in Bangladesh.

Methods: This cross-sectional study was conducted at the Rheumatology Clinic of Dhaka Medical College Hospital over a period of 6 months from March 2018 to August 2018. A total of 600 arthritis patients underwent screening for PsA, with subsequent evaluations of confirmed cases based on the CASPAR criteria. Demographic and clinical characteristics were documented through face-to-face interviews and physical examination. For data collection, a pre-structured questionnaire was used. Disease activity was assessed using the DAPSA score. The study was conducted according to the 'Declaration of Helsinki'. The statistical analysis was done with SPSS v-21.

Results: The prevalence of PsA in arthritis patients was 5%. Age distribution of PsA showed a majority in between 30-39 years age group with a mean of 36.33 ± 11.86 (SD). Slight female predominance was reported with a percentage of 53.3%. Almost three-fourths of study patients presented with a current diagnosis of psoriasis while the rest had a personal history or family history. A higher incidence (67.7%) of plaque psoriasis was observed followed by seborrheic psoriasis (20%) and for the rest of the patients, the type of psoriasis was unknown. The disease mostly involved multiple joints (90%), with ankle and metacarpal joints being the most commonly affected at 43.3% and 33.3%, respectively. Disease activity was high in the majority of the patients according to the DAPSA score, representing 53.34% of the patients, with the remainder exhibiting moderate to low disease activity.

Conclusion: The study revealed a significant incidence of PsA among the arthritic population which indicates a pressing need for further extensive research on PsA across diverse populations. **Keywords:** Psoriatic Arthritis, CASPAR Criteria, DAPSA Score, Rheumatology, PsA Bangladesh, Joint Involvement.

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Introduction

Psoriatic arthritis (PsA) is an autoimmune disorder in the form of heterogenous arthritis, typically emerging as a complication of psoriasis¹ and characterized by both

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dermatological and rheumatological manifestations.²⁻⁴ With its dual impact on skin and joints, this condition not only impairs the quality of life but also significantly hampers physical functionality and work capability.⁵ Despite the associated disease burden, the identification and treatment of PsA are still not optimal¹ which is mostly due to the significant diagnostic delay in the majority of patients.⁶

Features of PsA may represent single or multiple musculoskeletal involvements including arthritis, enthesitis, dactylitis, axial involvement along with various degree of skin and nail lesions. Over 10% of the PsA patients develop musculoskeletal presentations before the skin and nail lesions.¹ Coexistence of psoriasis with other conditions associated with joint pain, such as osteoarthritis, gout, and

fibromyalgia is quite common which even adds to the existing diagnostic dilemma.⁷⁻⁹ Understanding the diverse features of PsA is essential to ensure an early and accurate diagnosis followed by implementation of effective treatment strategies. A comprehensive snapshot of the clinical presentation of PsA is vital to reduce the disease burden within a specific population. Using a specific diagnostic tool to identify PsA, especially among patients presenting with arthritic features in a defined population is crucial to understand the epidemiology and disease burden in that community.

In Bangladesh, where healthcare resources and specialized services are constrained enough, conditions with multiple system involvement like PsA often goes unnoticed due to absence of a holistic approach. Few studies considered to explore PsA, but the target population was mostly psoriasis patients.¹⁰ Till date, no study reported the incidence of PsA among the patients presenting with arthritic features, in Bangladesh. In order to fill the existing gap, the present study aimed to assess the prevalence clinical characteristics of PsA in Rheumatological clinical of a tertiary health care setting. Due to the challenges in identification of PsA, this study employed the Classification Criteria for Psoriatic Arthritis (CASPAR) as a diagnostic tool among all patients presenting with arthritis. CASPAR encompass a range of clinical, radiographic, and laboratory parameters, including the presence of psoriasis, nail dystrophy, dactylitis, radiographic evidence, and more.¹¹ The utilization of CASPAR criteria in present research ensures a standardized approach to PsA diagnosis, reducing the risk for diagnostic bias.

So, the present study aimed a comprehensive evaluation of the prevalence and clinical characteristics of PsA among the arthritic patients within the rheumatological clinical setting of a tertiary healthcare facility in Bangladesh. This study findings might enrich the existing understanding of PsA within patients presenting arthritic features as well as aid in building an effective, tailored public health strategies against PsA and psoriasis.

Materials and Methods

Study place, design and population:

This study was a descriptive cross-sectional study conducted over a period of six months in the Rheumatology Clinic, Department of Medicine in Dhaka Medical College Hospital. Adult patients aged 18 and above attending the study clinic with arthritis were screened for PsA and the confirmed cases were evaluated further. The study site was purposefully chosen as Rheumatology Clinic of this hospital is a tertiary level Government subsidized hospital located in the capital of the country and therefore, receives referral from surrounding districts. Due to its location and role as a referral center, the rheumatology clinic captures a wide spectrum of arthritis as well as PsA cases from various backgrounds and regions, providing a comprehensive snapshot of the behavior and incidence of disease.

During the study period a 600 of patients with various forms of arthritis were included in this study.

Diagnostic of PsA: PsA cases were distinguished from other forms of arthritis according to the CASPAR criteria.¹² Diagnosis requires at least three points from the following: current psoriasis (2 points), personal or family history of psoriasis (1 point each), psoriatic nail dystrophy (1 point), negative rheumatoid factor test (1 point), current or historical dactylitis (1 point each), and radiological signs of juxta-articular new bone formation (1 point).

Assessment of severity of PsA: DAPSA (Disease Activity in Psoriatic Arthritis) Score¹³ was used to assess the disease activity where disease activity level is remission with a total score of 0-4; low with 5-14, moderate with 15-28 and high with >28. DAPSA total score is calculated by this formula: Tender Joints count (0-66) + Swollen Joints count (0-66) + CRP (mg/dl) + Activity (Self rating on 'How active was rheumatic disease on average during the last week' on a scale of '0' to '10' where '0' depicts not active and '10' depicts very active) + Pain (Self rating on 'How was overall level of joint pain during the last week' on a scale of '0' to '10' where '0' depicts none and '10' depicts very severe).

Data collection procedure: Data collection was proceeded through face-to-face interview with a pre-structured questionnaire which was constructed based on demographic information, the clinical history and physical examination findings.

Ethical issues: Written informed consent was ensured from each patient prior to the enrollment. Ethical clearance for this study was sought from ethical review committee of Dhaka Medical College Hospital. The study followed 'Declaration of Helsinki' on every aspect. The anonymity of the patient was maintained with highest priority.

Statistical analysis: Statistical analysis was carried out using SPSS v-21. For continuous variable, data were expressed by mean and standard deviation. Qualitative or categorical variables were described as frequencies and proportions. All statistical tests were two-sided and performed at a significance level of $p < 0.05$.

Result

A total of 600 patients with various forms of arthritis attended the studied hospital during the study period and among them, 5% were diagnosed with psoriasis arthritis (PsA) according to CASPAR criteria (Figure 1)

The predominant age group among the PsA patients was 30-39 years with an average of 36.33 years. Almost two-thirds of the study patients were aged below 40 years. Gender distribution showed a slight female predominance with over half of the total patients. Most of the patients in this study hailed from urban residential area. Educational attainment of the patients were variable where near half of the patients completed only secondary school. In terms of economic demographics, the monthly income profile indicated that the

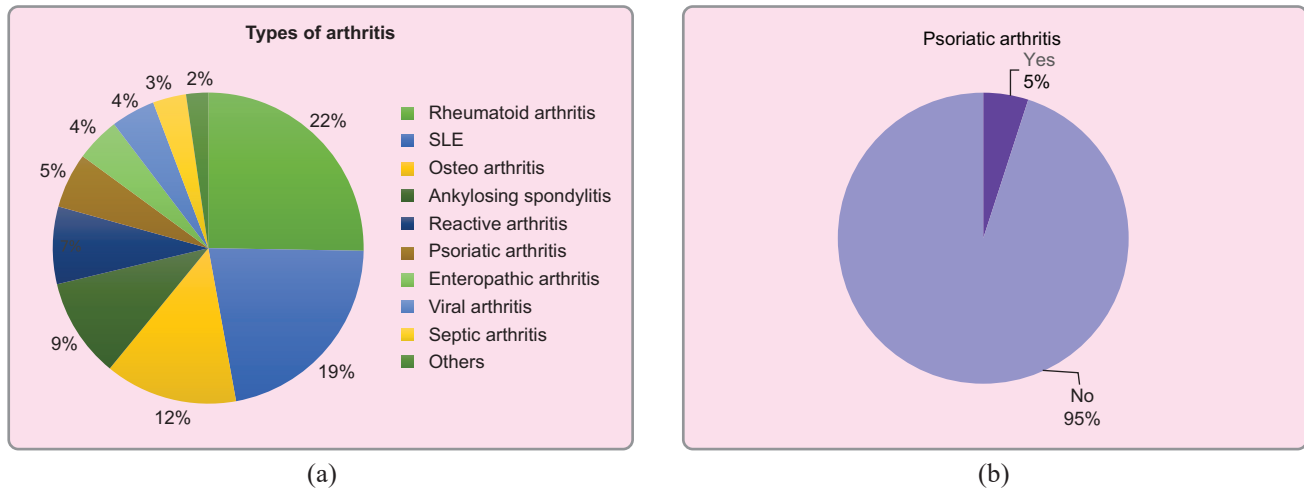


Figure 1: Incidence of psoriatic arthritis among the arthritic patients attending the study place (n=600)

largest patient segment earns between 10,000 to 20,000 Bangladeshi Taka. (Table 1)

Table 1: Socio-demographic characteristics of the patients with psoriasis arthritis (n=30)

Socio-demographic characteristics	n (%)
Age group (years)	
20-29	7 (23.33)
30-39	13 (43.33)
40-49	5 (16.66)
Mean ±SD	36.33±11.86
Gender	
Male	14 (46.7)
Female	16 (53.3)
Residence	
Urban	27 (90)
Rural	3 (10)
Educational attainment	
Secondary school	13 (43.34)
Higher Secondary	7 (23.33)
Graduation	10 (33.33)
Monthly income (BDT)	
<10000	8 (26.7)
10000-20000	12 (40)
20000-40000	9 (30)
>40000	1 (3.3)

Almost three-fourth of the patients had current psoriasis. The most common type of psoriasis was a plaque in two-thirds of total study patients and majority of patients suffered from multiple joint involvements. According to the Moll and Wright criteria, symmetric arthritis was present among over half of the patients. Joint involvement predominantly affected the ankle and metacarpal joints.

The Disease Activity in Psoriatic Arthritis (DAPSA) score, a measure of disease severity, showed that more than half of the patients had high disease activity. (Table 2)

Table 2: Clinical characteristics of the patients with psoriasis arthritis (n=30)

Clinical characteristics	n (%)
State of psoriasis	
Current psoriasis	22 (73.3)
Personal history	4 (13.3)
Family history	4 (13.3)
Type of psoriasis	
Plaque	20 (67.7)
Seb psoriasis	6 (20)
Unknown	4 (13.3)
Joint involvement	
Single joint involvement	3 (10)
Multiple joint involvement	27 (90)
Clinical pattern according to Moll and Wright criteria	
Symmetric	16 (53.3)
Oligo arthritis	7 (23.3)
Axial	4 (13.3)
Classical	3 (10)
Joint involvement	
Ankle joint	13 (43.3)
Knee joint	2 (6.7)
Spine	3 (10)
Metacarpal	10 (33.3)
Distal Interphalangeal	2 (6.7)
Severity of disease (DAPSA score)	
Low disease activity	4 (13.33)
Moderate disease activity	10 (33.33)
High disease activity	16 (53.34)

Discussion

The present study conducted at the Rheumatology Clinic in Dhaka Medical College Hospital has provided critical insights into the incidence and characteristics of PsA in a tertiary care setting in Bangladesh. The incidence of PsA among the attending arthritis patients was 5% in this study. The exact prevalence is unknown, but estimates vary from 0.3% to 1% of the population and among arthritis patients is 2-3%,¹⁴ while the present study showed comparable higher incidence reflecting a more pronounced presence of PsA among the study patients. This disparity could be attributed to various factors including genetic predisposition, environmental triggers, or even the referral nature of the tertiary care center which tends to attract more complex cases. Geographic and ethnic diversity, patient-specific psoriasis characteristics, and diagnostic criteria variance all influence this rate.¹⁶

PsA patients were presented with a younger demographic mostly, primarily those in 2nd and 3rd decades of their life. Kumar et al. noted a majority of PsA cases in the age group of 30-50.¹⁵ A study conducted in Norway reported peak age of PsA as 50-59 years.¹⁷ A large scale study conducted among registered psoriasis patients of United States, Canada, Europe and Middle East reported that PsA affects most people on their 5th decade.¹⁸ These variable findings across diverse populations underscore PsA's consistent age-related prevalence, and reinforce the importance of early diagnosis and management in this age group. The slight female predominance observed in this study. Though PsA affects male and female equally, some studies reported higher frequency of men¹⁹⁻²¹ and some reported the opposite.^{22,23} Studies showed that women appear to bear a heavier burden of PsA, experiencing greater pain, disability, and fatigue.²⁴⁻²⁶

Regarding clinical characteristics, the majority of PsA patients were newly diagnosed upon admission, indicating that many seek treatment with noticeable skin and joint symptoms concurrently. Consistent with literature, plaque psoriasis was the most common type among the patients, mirroring the chronic plaque predominance reported in other regions.^{27,28} Joint involvement was predominantly polyarticular, echoing findings from other studies where polyarthritis is often the most reported pattern.²⁹⁻³¹

Interestingly, while the most common joint complaints involved the ankle and metacarpal joints, this differs from other studies where hand joints were frequently affected.²⁹ These findings suggest that disease patterns may vary regionally, and this warrants further investigation. The DAPSA scores revealed a higher disease activity in younger age groups, especially those between 30 to 39 years, challenging the notion that PsA severity increases with age. This could indicate a need for earlier intervention in younger patients.

Another noteworthy finding was, about 13.3% of the patients didn't have psoriatic lesion on skin or nail and diagnosed based on the family history of psoriasis. This finding emphasizes the need of building an effective screening system and awareness among the vulnerable population.

The observed prevalence of PsA in the present study setting could point to lack of disease awareness. It emphasizes the need for dermatological screening in suspected PsA cases to facilitate early diagnosis and management. Our findings highlight the necessity for larger epidemiological studies to dissect the variations in PsA prevalence and presentations across different populations.

This study was not beyond limitations, including the small sample size and the focus on an urban tertiary center, which may not fully represent the rural and suburban populations of Bangladesh. Future studies should aim to include a larger, more diverse population to provide a more comprehensive understanding of PsA across the country.

Conclusion

Although a minor proportion of patients suffering from PsA, but all patients varied with different severity and gender disparity. Greater awareness and expanded research are essential to form more effective management strategies and improve outcomes for PsA patients in Bangladesh. Future studies should broaden their scope to provide a more comprehensive picture of PsA across diverse populations.

Declarations:

Ethics approval: The study protocol was reviewed and approved by the ERC of DMC. Ethical issues were maintained in accordance with the Helsinki Declaration.

Consent for publication: none

Availability of data and materials: The data and other necessary details are available and can be found upon reasonable request to the corresponding authors.

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