# PSORIATIC – ARTHRITIS AMONG PSORIASIS PATIENTS ATTENDING SKIN CLINICS IN DAR ES SALAAM, TANZANIA

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## Abstract

**Background: Psoriasis is an autoimmune inflammatory disease which primarily affects the skin but joints may also be targeted. Psoriatic arthritis is a destructive inflammatory arthropathy and ensethopathy which is considered to be rare in sub Saharan Africa. Left untreated the condition is permanently disabling. There are no studies in Dar es Salaam that have described psoriatic arthritis among psoriasis patients seen at dermatology clinics.**

**Broad objective: To describe psoriatic arthritis among psoriasis patients attending specialized skin clinics in Dar es Salaam.**

**Study design: Hospital – based – cross – sectional descriptive study**

**Study setting: Muhimbili National Hospital and three private hospitals in the City of Dar es Salaam**

**Study population: All patients attending skin clinics at Muhimbili National Hospital and three private hospitals in Dar es Salaam**

**Measures of outcome: Psoriasis and psoriatic arthritis**

**Intervention: Patients attending skin clinics at Muhimbili National Hospital and three private hospitals in Dar es Salaam were examined for the presence of psoriasis. Psoriasis was diagnosed clinically in most cases. Psoriatic arthritis was diagnosed according to the Moll and Wright criteria.**

**Results: A total of 42 patients with psoriasis were recruited into the study. Males constituted 71%. The mean age at onset of psoriasis was 37 years and the psoriasis onset age – group with the highest number of patients (33%) was 31 – 40 years. Joint complaints of different types were encountered in 21% (9/42) and of these only 2 patients (5%) had psoriatic arthritis. Of the 2 patients with psoriatic arthritis, one was a known HIV sero positive.**

**Conclusion and recommendations: Psoriatic arthritis occurs at a lower frequency among psoriasis patients in Dar es Salaam but the actual prevalence remains undetermined. More comprehensive studies are required to establish its magnitude.**

**Key words:** Psoriasis, Psoriatic arthritis, Dar es Salaam

## Introduction

Psoriasis is an autoimmune inflammatory disease which primarily affects the skin but joints may also be targeted.[1] The disease has a global distribution with its prevalence varying widely between less than 1% in parts of sub – Saharan Africa and up to 6% in certain areas of Europe and North America.[2] Within sub – Saharan Africa, relatively higher psoriasis incidence rates are observed in the mainly Bantu ethnic groups in Eastern Africa.[3] Clinically, plaque psoriasis is the commonest variant, affecting about 80% of individuals. The other presentations include guttate, pustular, inverse and erythrodermic psoriasis. Psoriatic arthritis (PsA) is defined as an inflammatory arthritis that is associated with psoriasis and is usually sero – negative for rheumatoid factor.[3] It is a destructive arthropathy and ensethopathy clinically resembling rheumatoid arthritis. The Moll and Wright criteria for the diagnosis of PsA include: (1) the presence of inflammatory arthritis (peripheral arthritis and/or sacroiliitis or spondylitis), (2) the presence of psoriasis, (3) the (usually) absence of rheumatoid factor.[4]

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The major types of PsA include; asymmetrical oligoarthritis, symmetrical polyarthritis, psoriatic spondilitis, arthritis mutilans, and distal interphalangeal arthritis.

In certain populations, between 10% and 30% of individuals with psoriasis, develop psoriatic arthritis ([4, 5]) It occurs more commonly in patients with tissue type HLA – B27.[6] Psoriatic arthritis can develop at any age, but on average it tends to appear about 10 years after the first signs of psoriasis which in the majority of people, is between the ages of 30 and 50 years.[5] Men and women are equally affected. In about 14% (1 out of 7), the arthritis symptoms may occur without any skin involvement.[4]

Psoriatic arthritis is said to be rare in sub – Saharan Africa.[5] This could be due to the fact that psoriasis itself is rare among Africans.[2] and HLA – B 27 which is commonly associated with PsA is virtually absent in most of the sub Saharan Africa.[6] However, the association between HIV infection with psoriasis and its related arthritis first reported in the USA is expected to increase the prevalence of PsA in sub – Saharan Africa due to the current HIV pandemic.[7, 8] According to Njovu and McGill, psoriatic arthritis is now probably no longer a rarity in African individuals with HIV infection. They have estimated that 13 of 100 000 of the HIV – seropositive general population of Lusaka have psoriatic arthritis.[9] They have also reported on 28 patients (22 men) with psoriatic arthritis seen at the University teaching hospital in Lusaka over a span of 44 months (1993 – 1997) in whom, all but one were HIV – seropositive.[9]

Little if any, has been documented about the presence of psoriatic arthritis in Tanzania, although psoriasis is encountered at an appreciable rate. Since psoriatic arthritis is progressive and permanently destructive, the affected individuals are likely to end up with disabilities and incapacitation for much of their life. Creation of awareness among clinicians and patients on PsA may lead to early detection and therapeutic intervention, which could significantly rectify the situation before it reaches an irreversible stage. The objective of this study was to describe the presence of psoriatic arthritis among psoriasis patients attending specialized skin clinics in Dar es Salaam.

## Materials and methods

This was a hospital – based cross – sectional descriptive study. Patients were consecutively recruited from Muhimbili National Hospital's dermatology clinic as well as from three private hospitals with special skin clinics in the City of Dar es Salaam. Muhimbili National Hospital is the country's largest tertiary referral centre that also serves as the teaching hospital for Muhimbili University College of Health Sciences. One of the three private hospitals also functions as a University Teaching Hospital.

Patients attending these clinics were examined for the presence of psoriasis. The diagnosis of psoriasis was made

clinically by a dermatologist. The clinical diagnosis was based on the demonstration of skin lesions fulfilling the following clinical criteria: 1) lesions that are sharply demarcated with clear – cut borders; 2) the surface of the lesion consists of dry non – coherent silvery – white scales that fall off easily as small flakes on scraping (candle phenomenon); 3) under the scale, a coherent moist sheet can be removed leaving behind skin that has a glossy homogenous erythematous/grayish appearance (last cuticle phenomenon) and 4) the lesion exhibits focal bleeding points after removal of the last cuticle (Aupitz phenomenon/sign) [10]. Doubtful cases were confirmed histologically through skin biopsy. Patients who fulfilled these criteria were requested to participate in the study after obtaining their verbal consent.

Each psoriasis patient was asked to fill in a structured questionnaire. The information sought included age; sex; ethnicity; age at onset of psoriasis; duration of psoriasis and whether their psoriasis was itchy. Psoriasis was categorized into 'thick plaque' (well demarcated and clearly elevated thick looking plaques), 'thin plaque' (well demarcated but almost flat thin looking plaques), 'guttate – like' (small discoid lesions, clearly demarcated but lacking the classic drop – like appearance), and 'mixed type'. A history of any joint complaints was recorded. Patients were specifically asked for joint pain, stiffness, swelling or deformity currently experienced or at any time over the last 2 weeks. They were also asked whether they had been diagnosed before, with any specific joint diseases like rheumatoid arthritis, reactive arthritis, osteoarthritis, e.t.c.

Patients with joint complaints had thorough clinical examination of their affected joints. Joint complaints were categorized into 'clinical arthritis' (joint pain associated with swelling and tenderness); arthralgia (joint pain without any swelling or tenderness) and occasional arthralgia (occasional joint pain without any swelling or tenderness). Blood samples were collected for rheumatoid factor. Psoriatic arthritis was diagnosed according to the Moll and Wright criteria.[11]

### Data handling and statistics

All data was entered into a computer, cleaned to ensure accuracy of all entries and finally analyzed using Epi Info version 6. Chi – squared test was used to compare categorical variables. A p – value of $< 0.05$ was considered to represent a statistically significant difference.

### Results

A total of 42 patients with psoriasis were recruited into the study. The age ranged from 15 to 76 years with a mean of 46 years. The age group of 41 – 60 years (see table) had the majority of the patients, 23/42 (55%) as compared with other age groups and this was statistically significant ($p < 0.0001$). Males were 71% (30/42). The duration of psoriasis was 5 years or less in the majority (55%) with a range of $\leq 1$ year to >20 years and a mean of 9 years. The age at onset of psoriasis ranged from 5 to 76 years with an average of 37 years. About one – third (14/42, 33%) of the patients had their onset of psoriasis in the age group of 31 – 40 years and this proportion was higher than in the other groups ($p = 0.004$). Overall, 62% (26/42) developed psoriasis before the age of 40 years. Itching was encountered in 88% (37/42) of the patients. About two – thirds of the patients, (27/42; $\simeq$ 64%) presented with thick – plaque psoriasis, while 17% (7/42) presented with a mixed type consisting of thick – plaques with guttate – like lesions. Other clinical varieties encountered included; mixed thin – plaque with guttate – like lesions in 4/42 (9.5%), guttate – like lesions in 3/42 (7%), and thin plaques in 1 individual (2%).

Joint complaints were encountered in 9/42 (21%) patients who were rheumatoid factor negative. Five were males and only 2 were under the age of 50 years. Clinical arthritis was present in only 2/42 (5%) individuals and none of them had any clinically evident joint deformity. Of the remaining, 5/42 (12%) had arthralgia and the other 2 (5%), had occasional arthralgia. All the two patients with clinical arthritis were indigenous Tanzanians, one male and one female, aged 42 and 55 years respectively. They all had symmetrical polyathritis affecting mainly the wrists, knees, and ankles. Clinically they all had wide spread thick – plaque psoriasis. The female patient had involvement of the sacroiliac joint as well and was a known HIV sero-positive on anti retroviral therapy. The male patient had severe pain of the affected joints that interfered with walking and performance of his routine activities. His HIV sero – status was unknown. One patient with no joint complaints was also known to be HIV – sero positive on anti – retroviral therapy.

**Clinical findings among psoriasis patients attending dermatology clinics in Dar es Salaam (n=42)**

| | No | (%) | P value |
|---|---|---|---|
| **Sex** | | | |
| Male | 30 | 71 | |
| Female | 12 | 29 | |
| **Age (yrs)** | | | |
| 0 – 20 | 2 | 5 | |
| 21 – 40 | 13 | 31 | |
| 41 – 60 | 23 | 55 | < 0.0001 |
| >60 | 4 | 9 | |
| **Duration of psoriasis at recruitment (yrs)** | | | |
| 0 – 5 | 23 | 55 | <0.0001 |
| 6 – 10 | 7 | 17 | |
| 11 – 15 | 3 | 7 | |
| 16 – 20 | 4 | 9 | |
| > 20 | 5 | 12 | |
| **Age at psoriasis onset (yrs)** | | | |
| 0 – 10 | 2 | 5 | |
| 11 – 20 | 6 | 14 | |
| 21 – 30 | 4 | 10 | |
| 31 – 40 | 14 | 33 | |
| 41 – 50 | 5 | 12 | < 0.004 |
| 51 – 60 | 8 | 19 | |
| > 60 | 3 | 7 | |
| **Joint complaint** | | | |
| Yes | 9 | 21 | |
| No | 33 | 79 | |
| **Type of joint complaint** | | | |
| Arthritis | 2 | 5 | |
| Arthralgia | 5 | 11 | |
| Occasional arthralgia | 2 | 5 | |

## Discussion

This is the first study on psoriatic arthritis in Dar es Salaam. Studies on psoriatic arthritis have been quite limited not only in Tanzania but in the whole of sub – Saharan Africa and even in other parts of the world. This has partly been attributed to lack of universally agreed and properly validated case definitions of psoriatic arthritis.[11] Until the pioneering work of Wright[12] and Baker[13] inflammatory arthritis occurring in the presence of psoriasis was felt to represent rheumatoid arthritis occurring coincidentally with psoriasis.

The Moll and Wright criteria for the diagnosis of PsA were applied in this study because they are the simplest and the most frequently used in current studies, although they are known to discriminate poorly between psoriatic arthritis and rheumatoid arthritis.[12] Using these criteria, this study has demonstrated the presence of PsA among psoriasis patients attending dermatology clinics in Dar es Salaam. However, only 5% (2/42) of psoriasis patients had clinically established arthritis while the other 16% (7/42) had mere arthralgia. It is well known that, clinical assessment and routine radiological examination alone may not be able to diagnose all cases of inflammatory arthritis. It is therefore possible that some or even all of the patients with arthralgia could have been having 'inflammatory arthritis' and therefore PsA at a very early stage, which could only be detected by more sophisticated diagnostic tools like nuclear magnetic resonance imaging. The increasing use of nuclear magnetic resonance imaging techniques, with their ability to delineate bone, cartilage and ligamentous structures and to identify edema, are providing a radical improvement in ascertainment of musculoskeletal disorders including PsA.[5] Unfortunately, these techniques are hard to access routinely in the financially constrained developing countries like Tanzania. The inability to perform nuclear magnetic resonance imaging to all psoriasis patients could have led to failure to detect asymptomatic PsA and consequently the actual number could have been underestimated. The 5% of patients, who had clinically demonstrable arthritis in this study, could have been representing the relatively more advanced stages of PsA while missing out the early and therefore clinically in apparent cases. Arguably though, non specific arthralgia is quite common after the age of 50 years and this could be the case in those patients found to have arthralgia but no clinical arthritis. This can only be resolved by performing large – scale comprehensive studies.

In this study, psoriasis patients were not screened for HIV infection. There is a strong need to conduct more studies to determine the magnitude of the association between HIV infection and psoriasis with psoriatic arthritis. The absence of modern diagnostic tools in our settings makes any efforts trying to do research on PsA grossly limited. Nevertheless, all attempts must be made to address this subject because of the potential incapacitating nature of PsA whose true prevalence in this country is still largely undetermined.

## Conclusion and recommendations

Psoriatic arthritis exists at lower frequency among psoriasis patients in Dar es Salaam but the actual prevalence remains unknown. More comprehensive studies are required to determine its prevalence and the magnitude of its association with HIV infection.

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