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INTRODUCTION

The prevalence of psoriasis with concomitant human immunodeficiency virus (HIV) infection ranges from 2.5%-5%.¹⁻² Psoriasis may be an initial manifestation of HIV infection and diagnosis becomes arduous when more than a single subtype of psoriasis occurs in the same patient concurrently.³⁻⁴ As HIV testing is not routinely performed for patients with psoriasis, the diagnosis can be missed or delayed. Our objective was to determine the frequency of HIV infection among patients with psoriasis and to describe the clinical features and treatment of psoriasis in this population.

MATERIALS AND METHODS

A retrospective cross-sectional study of psoriasis patients with HIV infection treated between January 2007 and December 2018 at the Dermatology Department, Hospital Kuala Lumpur (HKL) was performed. Case notes from HKL were cross-referenced with data from the Malaysian Psoriasis Registry.

RESULTS

- A total of 2946 patients with psoriasis were treated during the study period at Hospital Kuala Lumpur. Of these patients only 8 (0.27%) had HIV infection and all were male. Table 1 shows the demographic characteristics.
- Six of them contracted HIV infection prior to developing psoriasis. Of the six, two had psoriasis as the initial manifestation of HIV infection. Mean time to develop psoriasis was 5.83 years (1 to 16 years).
- Table 2 demonstrates the clinical features of our cohort and the treatment received.
- One patient had Hepatitis B and C co-infection.
- None of the patients received biologic treatment.

Table 1 Demographic characteristics

Demographic Characteristics		HIV n=8	Non-HIV n=2938	P value
Age (years)	Mean (SD)	36.5 (10.18)	41.8 (16.8)	p=0.38
	Min, Max	22,51	5,91	
Ethnicity, n (%)	Malay	2 (25)	1645 (56.0)	
	Chinese	3 (37.5)	495 (16.8)	
	Indian	3 (37.5)	763 (26.0)	
	Others	0 (0)	35 (1.2)	
Body mass index (kg/m ²), n(%)	< 18.5	0 (0)	120 (4.1)	
	18.5-22.9	5 (62.5)	502 (17.1)	
	23-24.9	1 (12.5)	340 (11.6)	
	≥25	2 (25)	1519 (51.7)	
	Not available	0	457	
Smoker, n (%)		6 (75)	401 (13.6)	p < 0.001
Family history of psoriasis, n (%)		1 (12.5)	794 (27.0)	p = 0.97

Table 2 Clinical characteristics

Clinical characteristics		HIV N=8	Non-HIV n=2938	P value
Type of psoriasis, n (%)	Plaque	7 (87.5)	2590 (88.2)	
	Erythrodermic	1 (12.5)	40 (1.4)	
	Inverse	0 (0)	15 (0.5)	
	Guttate	0 (0)	24 (0.8)	
	Pustular	0 (0)	26 (0.9)	
	Palmoplantar	0 (0)	9 (0.3)	
	Scalp only	0 (0)	13 (0.4)	
	Not available	-	221	
Body surface area, n (%)	< 5%	3 (37.5)	1141 (38.8)	
	5-10%	1 (12.5)	675 (2.3)	
	10-90%	3 (37.5)	460 (15.7)	
	> 90%	1 (12.5)	57 (1.9)	
	Not available	-	605	
CD4 count at presentation	Mean (SD)	328.38 (178.37)	-	
	Min, Max	8, 493	-	
Nail disease, n (%)		7 (87.5)	1780 (60.6)	p=0.48
Joint disease, n (%)		2 (25)	421 (14.3)	p=0.62
Treatment, n (%)	Topical	8 (100)	2717 (92.5)	p=0.72
	Phototherapy	4 (50)	172 (5.9)	p < 0.001
	Methotrexate	1 (12.5)	348 (11.8)	p=0.97
	Acitretin	2 (25)	125 (4.3)	p=0.07
	Systemic corticosteroids	1 (12.5)	16 (0.5)	
	Biologics	0 (0)	17 (0.6)	

DISCUSSION

- The frequency of HIV infection among patients with psoriasis in our cohort is lower compared to previous studies.
 - One possible explanation for this is the reporting bias by patients who may not want to reveal their HIV status for various reasons.
 - This is compounded by the fact that HIV screening is not mandatory for all psoriasis patients and only performed if treatment with an immunosuppressive agent is contemplated.
 - Currently there is no consensus on HIV assessment in psoriasis patients. However there are suggestions that those with severe, multiple subtypes occurring together, atypical, rupoid and recalcitrant psoriasis be tested for HIV.⁵⁻⁶
- A study by Obuch et al showed that more patients were diagnosed with psoriasis after acquiring HIV infection compared to those who had psoriasis before HIV infection which is reflected in our study.¹
 - Studies have also shown that HIV infected individuals are more likely to present with severe sudden onset psoriasis, palmoplantar keratoderma, nail dystrophy, joint disease, inverse and pustular psoriasis although plaque psoriasis is still the most common subtype.⁷
- Only one patient had a family history of psoriasis with psoriasis preceding HIV infection.
 - These type of patients are likely to manifest with clinical features of psoriasis that resemble those in the general population.⁸⁻⁹
- Worsening of psoriasis has been demonstrated to correlate with declining immunodeficiency and increasing viral loads.
 - Erythrodermic psoriasis occurred in one patient who had the lowest CD4 count (8 cells/mm³).
 - Research has shown that there is a close association between psoriasis severity and reduction in CD4+ T-lymphocyte count but the mechanism of which is yet to be fully understood.^{5,8}
- Phototherapy is efficacious in controlling psoriasis in HIV as in non-HIV patients without escalating plasma viral load levels or modifying the immune response. Nonetheless, it's use in patients with Kaposi's sarcoma is prohibited as it may lead to worsening.¹⁰
 - In this study phototherapy was used significantly more in HIV patients compared to non-HIV patients.
- Highly active antiretroviral therapy (HAART) is recommended as first line and acitretin is favoured as second line over methotrexate and ciclosporin as it is non-immunosuppressive in treating HIV infected psoriasis patients.¹¹
- Biologic agents such as etanercept, adalimumab, infliximab and ustekinumab have been widely used to treat psoriasis patients with good clinical response, safety profile and tolerance¹²⁻¹³. However our dermatologists are still conservative in their prescription in HIV infected individuals.
- Limitations: As with retrospective studies, there were some missing data and causal relationship could not be determined.

CONCLUSION

The frequency of HIV infection among patients with psoriasis was 0.27%. Majority of the patients had HIV infection preceding the diagnosis of psoriasis. Psoriasis was the first presentation of HIV infection in one quarter of the patients. Phototherapy was the preferred modality used to treat severe psoriasis with HIV infection and usage of biologic treatment was limited to non- HIV infected psoriasis patients.

CONFLICT OF INTEREST

The authors do not have any conflict of interest.

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