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Clinical characteristics, management and quality of life of psoriasis patients with co-existent lupus erythematosus:

Data from the Malaysian Psoriasis Registry

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KEMENTERIAN KESIHATAN MALAYSIA

Introduction

The coexistence of psoriasis and lupus erythematosus (LE) is uncommon.[1] This study aimed to determine the clinical profile of psoriasis patients with co-existent LE in Malaysia.

Material & Methods

A retrospective cross-sectional study was performed utilizing the Malaysian Psoriasis Registry (MPR) data. All patients with co-existent LE registered from 1-1-2007 till 31-12-2018 were included.. Additional data of psoriasis patients with co-existent LE was obtained from their clinical notes. Demographic data, clinical characteristics, management and DLQI scores were gathered and analyzed.

Results

- Among 21,735 psoriasis subjects, 34 (0.16%) had co-existent LE.
- There was a significant female preponderance with a male to female ratio of 1:5.8.
- Psoriasis patients with LE had an earlier age of psoriasis onset, a higher rate of psoriatic arthropathy (PsA) and were more likely to receive systemic treatment compared to those without LE.
- Seventy-eight percent of (n=7) them had PsA with the most common being symmetric polyarthropathy (n=3) followed by asymmetric monoarthropathy (n=2).
- Hydroxychloroquine triggered the onset of psoriasis in 7 patients.
- Although psoriasis patients with and without LE have similar BSA involvement and comparable mean DLQI scores, a significantly higher percentage of the cohort with LE reported DLQI scores of >10.

Table 1: Demographic data of psoriasis patients with and without LE

Characteristics	Psoriasis with LE	Psoriasis without LE	p-value
Mean age of onset of psoriasis (years)	**27.56±11.51**	33.31±16.94	**0.006**
Gender	*n=34*	*n=21,701*	
Male	5 (14.7%)	12,053 (55.5%)	**<0.001**
Female	29 (85.3%)	9,648 (44.5%)	
Ethnicity	*n=34*	*n=21,695*	
Malay	15 (44.1%)	11,776 (54.3%)	-
Chinese	8 (23.5%)	4,140 (19.1%)	
Indian	4 (11.8%)	3,576 (16.5%)	
Others	7 (20.6%)	2,201 (10.1%)	
Family history	*n=34*	*n=21,122*	
	6 (17.6%)	4,851 (23%)	0.46
Comorbidities	*n=34*	*n=21,122*	
Dyslipidaemia	6 (16.5%)	3,406 (16.1%)	0.73
Hypertension	9 (28.1%)	4,977 (23.6%)	0.56
Diabetes mellitus	0	3329 (15.8%)	**0.01**
IHD	0	1011 (4.8%)	0.20
CVA	0	307 (1.5%)	0.48
HIV	0	105 (0.5%)	0.68

CVA= Cerebrovascular Accident, IHD = Ischaemic heart disease, HIV = Human Immunodeficiency Virus

Table 2. Clinical characteristics & Quality of life of psoriasis patients with & without LE

Characteristics	Psoriasis with LE	Psoriasis without LE	p-value
Affected sites			
Scalp	*n=34* 31 (91.2%)	*n=20,610* 16,740(81.2%)	0.14
Face & neck	*n=34* 21 (61.8%)	*n=20,380* 10,489(51.5%)	0.23
Nail	*n=34* 21 (61.8%)	*n=21,070* 11,855 (56.3%)	0.52
Psoriatic arthropathy	*n=34* 9 (26.5%)	*n=21,056* 2,747 (13.0%)	**0.02**
Types of psoriasis	*n=32*	*n=20440*	
Plaque	29 (90.6%)	18,966 (92.8%)	-
Erythrodermic	1 (3.1%)	389 (1.9%)	-
Pustular	1 (3.1%)	147(0.72%)	-
Guttate	0 (0%)	738 (3.6%)	-
Flexural	0 (0%)	104 (0.5%)	-
Palmoplantar non-pustular	1 (3.1%)	86 (0.42%)	-
Body Surface Area >10	6 (20%)	3,949 (23.9%)	0.62
Mean DLQI	10.45±6.25	9.61±6.76	0.44
DLQI>10	19 (57.6%)	7,941 (40.3%)	**0.04**
	n=33	*n=20,747*	
Systemic therapy	10 (30.3%)	2,950 (14.2%)	**0.008**
Acitretin	1 (3%)	580 (2.8%)	0.94
Methotrexate	8 (24.2%)	2,285 (11.0%)	**0.02**
Corticosteroids	7 (21.2%)	172(0.8%)	**<0.001**
Cyclosporine	2 (6.1%)	142 (0.7%)	**<0.001**
Hydroxyurea	0 (0%)	23 (0.1%)	0.85
Phototherapy	0 (0%)	552 (2.7%)	0.33
Biologics	0 (0%)	78 (0.4%)	0.72

DLQI= Dermatology Life Quality Index

Table 3: Comparison of onset of LE in psoriasis patients

Characteristics	LE preceded psoriasis n=22 (%)	LE diagnosed concurrently with psoriasis n=5 (%)	Psoriasis preceded LE n=5 (%)
Mean age of onset for psoriasis (years)	28.41±11.68	25.00±12.31	23.40±9.56
Mean age of onset for LE (years)	20.14±7.62	25.00±12.31	41.60±12.68
Male : Female	1:4.5	0:5	1:4
Type of LE			
SLE	20 (90.9)	5 (100)	3 (60)
Acute CLE	2 (9.1)	0 (0)	1 (20)
Subacute CLE	1 (4.5)	0 (0)	3 (60)
Chronic CLE	0 (0)	4 (80)	1 (20)
Organ involved			
Renal	16 (72.7)	5 (100)	2 (40)
Joint	10 (45.5)	2 (40)	2 (40)
Haematology	11 (50)	2 (40)	1 (20)
Musculoskeletal	1 (4.5)	0 (0)	0 (0)
Eyes	2 (9.1)	1 (20)	0 (0)
Autoantibodies detected			
ANA	13 (59.1)	3 (60)	3 (60)
ENA	10 (45.5)	2 (40)	1 (20)
dsDNA	5 (22.7)	3 (60)	1 (20)
Systemic treatment used for LE			
Corticosteroids	15 (68.2)	5 (100)	4 (80)
Hydroxychloroquine	13 (59.1)	2 (40)	0 (0)
Mycophenolate mofetil	7 (31.8)	0 (0)	1 (20)
Methotrexate	5 (22.7)	0 (0)	1 (20)
Azathioprine	5 (22.7)	3 (60)	0 (0)
Cyclosporine	3 (13.6)	1 (20)	0 (0)

SLE= Systemic lupus erythematosus, CLE = Cutaneous lupus erythematosus, ANA= Antinuclear antibody, ENA= extractable nuclear antigen antibodies, dsDNA= double stranded DNA

Discussion

- The incidence of psoriasis with LE in our study was slightly lower compared to other countries (0.37% in Israel and 5.1% in The United States).[2,3]
  - This could be due to under-reporting as the MPR data is submitted on a voluntary basis and may not reflect the true incidence.
- The female to male ratio was significantly higher in psoriasis patients with co-existent LE. This corresponds to the gender predilection in systemic lupus erythematosus (SLE).[4]
- Korkus D et al reported that patients with PsA had a higher prevalence of SLE.[2] Similarly, we found that psoriasis patients with LE were more likely to have PsA than those without LE.
- LE preceded psoriasis in 2/3 of the patients with earlier disease onset and they had a higher prevalence of renal and joint involvement compared to patients with psoriasis preceding LE.
  - Arthritis in SLE is usually deforming but non-erosive, whereas PsA is usually erosive. Hence, early radiographic imaging is beneficial to identify patients with PsA.[5]
- Although the numbers were small, subacute and chronic cutaneous LE appeared to be more frequent among those who had LE concurrently or after the onset of psoriasis.
- Autoantibodies such as ANA, ENA & dsDNA, were comparable among the 3 groups of psoriasis patients portrayed in Table 3. Therefore, it is not useful in the prediction of the onset of LE in psoriasis patients.
- Both IL-17 and IL-23 which are known to be associated with psoriasis and LE, play an important role in the induction of both diseases.[6,7] However, the pathophysiology of the coexistence of these diseases is not fully understood.
  - IL-17 inhibitors, which increase the T regulatory cells may be used for the treatment of psoriasis with coexisting SLE.[8]
- Psoriasis patients with co-existent LE are at a higher risk of photosensitivity hence UVB phototherapy is contraindicated.[9] There were no LE patients precipitated or aggravated by phototherapy in our cohort.
  - Autoantibody screening of SS-A (Ro) is recommended for psoriasis patients with a positive history of photosensitivity prior to the initiation of phototherapy.[10]
- Hydroxychloroquine (HCQ), the treatment of choice for SLE may exacerbate psoriasis as it promotes the production of IL-17.[11,12]
  - A third of our cohort with pre-existing LE had their psoriasis precipitated by HCQ.
- Anti-TNFα, the approved therapy for psoriasis, is associated with drug-induced LE.[13] However, none was captured in our registry.
- Psoriasis patients with LE had a greater impairment of their quality of life.
  - Factors possibly contributing to the poor quality of life are high disease activity of SLE, cutaneous and extra-cutaneous manifestations of LE and psoriasis, as well as side effects of the systemic therapy.

Conclusion

The prevalence of psoriasis patients with co-existent LE in our patient population was 0.16%. They displayed a female preponderance, were more likely to develop PsA and suffered greater impairment to their quality of life than those without LE. LE preceded psoriasis in a majority and SLE was the most common subtype.

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