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Psoriasis And Malignancy, Is There A Link?

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INTRODUCTION

The risk of malignancy in psoriasis patients may be attributed to the chronic inflammatory course of the disease, the associated comorbidities and the treatment modalities employed.[1] However, the association between psoriasis and malignancy has not been explored much in Asians.

MATERIALS & METHODS

Our aim is to determine the frequency of malignancy and to identify the risk factors associated with malignancy among psoriasis patients in Malaysia. A retrospective cross-sectional study was performed utilizing the database of the Malaysian Psoriasis Registry. All psoriasis patients registered from 1.1.2007 till 31.12.2018 who were diagnosed with malignancy during their lifetime were included.

RESULTS

- There were 123 (0.57%) psoriasis patients who reported a malignancy from a total of 21735 patients.
- The male to female ratio was 1:1.41.
- The rate of malignancy was highest in inverse psoriasis (4.81%) followed by localized pustular psoriasis (1.79%), guttate psoriasis (0.81%), plaque psoriasis (0.57%), and erythrodermic psoriasis (0.26%).
- The Chinese had the highest rate of malignancy (32.5%) followed by Malays (31.7%) and Indians (14.6%).
- Only 1 paediatric patient (16 years old) had malignancy which was a brain tumour.

Table 1 Ten most common cancers

	Male (n=51)	Female (n=72)
Site, n (%)	Leukemia 7 (13.7)	Breast 42 (58.3)
	Colon 5 (9.8)	Ovarian 5 (6.9)
	Rectal 5 (9.8)	Uterus 4 (5.6)
	Lymphoma 4 (7.8)	Colon 4 (5.6)
	Prostate 3 (5.9)	Thyroid 4 (5.6)
	Squamous cell carcinoma 3 (5.9)	Lymphoma 3 (4.2)
	Brain 3 (5.9)	Brain 3 (4.2))
	Lung 3 (5.9)	Esophagus 1 (1.4)
	Thyroid 2 (3.9)	Cervix 1 (1.4)
	Bladder 2(3.9)	Leukemia 1 (1.4)

Table 2 Demographic characteristics

		Malignancy n= 123	No malignancy n= 21612	P value
Age (years)	Mean (SD)	54.4 (13.1)	41.7 (17.4)	***p<0.001***
	Min, Max	16,82	20,92	
Age, n (%)	>40 years	104 (84.6)	11197 (51.8)	***p<0.001***
	≤40 years	19 (15.4)	10415 (48.2)	
Gender, n (%)	Male	51 (41.5)	12007 (55.6)	***p=0.002***
	Female	72 (58.5)	9605 (44.4)	
Ethnicity, n (%)	Malay	39 (31.7)	11752 (54.3)	
	Chinese	40 (32.5)	4108 (19)	
	Indian	18 (14.6)	3562 (16.5)	
	Others	26 (21.1)	2190 (10.1)	
History of smoking, n (%)		18 (23.1)	3966 (31)	*p =0.13*
Co-morbidity , n (%)	Dyslipidemia	30 (25.4)	3382 (16.4)	*p=0.008*
	CVD	3 (2.5)	304 (1.5)	*p=0.35*
	DM	31 (25.6)	3298 (15.8)	*p=0.003*
	IHD	5 (4.1)	1006 (4.8)	*p =0.72*
	Hypertension	51 (42.9)	4935 (23.7)	*p<0.001*
(BMI) (kg/m^2), n (%)	< 23	36 (34.6)	5510 (29.3)	*p =0.23*
	≥ 23	68 (65.4)	13324 (70.7)	

BMI= body mass index; SD= standard deviation; CVD= cerebrovascular disease; DM = diabetes mellitus IHD= ischemic heart disease

Table 3 Clinical characteristics and treatment

		Malignancy n= 123	No malignancy n= 21612	P value
Type of psoriasis, n (%)	Plaque	106 (89.1)	18889 (99.4)	
	Guttate	6 (5)	732 (3.6)	
	Inverse	5 (4.2)	99 (0.5)	
	Erythrodermic	1 (0.8)	389 (1.9)	
	Localised pustular	1(0,8)	55 (0.3)	
	Generalised pustular	0 (0)	92 (0.5)	
	Nail	0 (0)	8 (0.1)	
	Palmoplantar non pustular	0 (0)	87 (0.4)	
BSA, n (%)	≤ 10%	75 (78.1)	12540 (76.1)	*p=0.65*
	> 10%	21 (21.9)	3934 (23.9)	
DLQI , n (%)	≤ 10	80 (66.7)	11722 (59.7)	*p=0.12*
	> 10	40 (33.3)	7925 (40.3)	
Psoriatic arthropathy, n (%)		10 (8.2)	2746 (13.1)	
Treatment, n (%)	Phototherapy	1 (0.8)	551 (2.7)	*p=0.21*
	Acitretin	7 (5.8)	574 (2.8)	*p=0.05*
	Methotrexate	5 (4.1)	2288 (11.1)	*p=0.02*
	Ciclosporin	0	144 (0.7)	*p=0.36*
	Hydroxyurea	1 (0.8)	22 (0.1)	*p=0.02*
	Biologics	0	78 (0.4)	*p=0.5*

BSA= Body Surface Area; DLQI=Dermatology Life Quality Index

DISCUSSION

- A systematic review and meta-analysis by Vaengebjerg et al stated that the overall prevalence of cancer in patients with psoriasis was 4.78%.[2] Our lower rate is possibly due to self reporting bias.
- According to our national cancer registry, the most common type of malignancies among men were colorectal cancer, cancer of the respiratory tract and prostate cancer. Leukemia, the most common in our cohort, was the sixth most common type of cancer. Whereas for women, it was breast cancer followed by colorectal and cervical cancer.[3]
- The Malaysian National Cancer Registry reported that the Chinese and females had a higher incidence of cancer which is also reflected in our data.[3]
- A higher rate of diabetes mellitus and hypertension was noted among the psoriasis patients with malignancy compared to the general population.[4] As we cannot ascertain the causal relationship from the registry data, we postulate this may be due to the cancer therapy they received such as corticosteroids.
- It has been shown that severe psoriasis and treatment with psoralen + ultraviolet therapy, methotrexate, ciclosporin, mycophenolate mofetil and tumor necrosis factor(TNF)-α inhibitors increase the risk of developing cancer.[5,6,7] However, in our cohort, smoking, severe disease and exposure to immune-modulating agents did not appear to increase the risk of malignancy. None of the cutaneous squamous cell carcinoma patients (aged 63-74 years) had been treated with phototherapy or systemic treatment.
- We did not find any evidence to support the association between inverse psoriasis and developing cancer.

CONCLUSION

The frequency of malignancy was 0.57% among psoriasis patients in our registry. Being older than 40 years and female was significantly associated with malignancy in psoriasis patients. The rate of malignancy was highest for inverse psoriasis.

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