Clinical Characteristics of Thai Patients with Psoriasis

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Objective: *To reveal the clinical manifestations, aggravating factors, factor associated with severity, and treatment of psoriasis in Thai patients.*
Material and Method: *The data of psoriasis patients who had been visited Dermatologic outpatient clinic, Siriraj Hospital between July 2002 and July 2008 were retrospectively reviewed.*
Results: *One thousand eighty two patients were studied. The male to female ratio was 1.2:1 and the peak age of onset was in the 40 to 49 year-old age group. The most common aggravating factor was stress (50%), followed by trauma (39%) and weather condition (35%). The majority of patients had plaque type (72.8%). Male gender, smoking, alcohol intake, and nail abnormalities were related to severe psoriasis (PASI > 10).*
Conclusion: *The present study demonstrated the demographic data of Thai psoriasis patients in a large number of population. These data would be beneficial for national public health development of Thailand in order to provide the better care for Thai psoriasis patients.*

Keywords: *Clinical characteristics, Psoriasis, Thai*

J Med Assoc Thai 2012; 95 (6): 795-801
Full text. e-Journal: *http://jmat.mat.or.th*

Psoriasis is a common chronic inflammatory disease of the skin. The typical clinical manifestation is characterized by erythematous plaque with silvery scales symmetrically distributed on the extensor surface of extremities. Psoriasis has various clinical patterns for example, psoriasis vulgaris (plaque type psoriasis), guttate psoriasis, inverse psoriasis, erythrodermic psoriasis, and pustular psoriasis. Genetic, environmental factors and unbalance of immune system play a role in pathogenesis of this disease[1].

The prevalence of psoriasis varies from 0.6 to 4.8% depending on ethnicity and study methods[2]. The low prevalence is observed in some ethnic groups such as Japanese, Australian aborigines and South American Indians[3]. Sinniah et al[4] studied 5,607 psoriasis patients in Malaysia and revealed that the disease was more common in males and in the fifth and sixth decade of life. Indians were affected more than Malays and Chinese, respectively[4]. A study of psoriasis in India also demonstrated that it was twice as prevalent in males, however it usually occurred in the third or fourth decade of life[5].

Some risk factors reported to be associated with the development of psoriasis are positive family history of psoriasis, infections, smoking, alcohol, or particular drug intake[2]. Alcoholic drinking also has a significant relationship with disease severity and treatment outcomes[6]. Association between psoriasis and some comorbidities such as cardiovascular diseases, obesity, diabetes, autoimmune diseases, and psychiatric disorders have been recognized[7-10].

Although there are many epidemiological studies of psoriasis, data from Thailand are still limited. The aim of the present study is to reveal the clinical manifestations, aggravating factors, associated diseases and treatment of psoriasis in Thai patients. These data are important for national public health policy development and would be beneficial for the better care of Thai patients who have psoriasis.

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Material and Method

Ethical approval was granted by Siriraj Institutional Review Board, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand. The

present study was carried out among patients with psoriasis aged over 18 years who were treated and followed up at the Dermatology outpatient clinic, Siriraj Hospital in the period between July 2002 and July 2008. The diagnosis of psoriasis was decided by dermatologists and based on the clinical manifestations. In some cases, skin biopsy was carried out for confirming diagnosis.

The recorded data included sex, age, age of onset, type of psoriasis, nails or joints involvement, severity of disease (Psoriasis Area and Severity Index: PASI score), family history of psoriasis, smoking or alcohol drinking history and current treatments.

Statistical Analysis was performed using the SPSS software version 17.0.0[11]. Descriptive statistics including number, percent, mean, and standard deviation was used to describe demographic data, patients' history, physical findings, and treatment. Inferential statistics such as Chi-squared test or Fisher's exact test and multiple logistic regression was performed to demonstrate factors related to disease severity. Statistical significance (odds ratio with 95% confidence interval (CI)) was set at $p < 0.05$.

Results

Of 1,082 patients, 591 (54.6%) were males while 491 (45.4%) were females and male to female ratio was 1.2:1. Age of onset ranged from 18 to 88 years with the highest proportion in the 40 to 49-year-old age group (Fig. 1). Table 1 shows demographic data of patients with psoriasis. The most common co-existing disease was hypertension, followed by diabetes mellitus and dyslipidemia. Nearly one-fifth or 186 patients reported positive family history of psoriasis of which 132 (71%) and 54 (29%) respectively were the first- and second-degree relatives. Positive family history was found more commonly in patients who had onset of psoriasis before 40 years old ($p = 0.004$). Looking closely to smoking habits and alcohol intake, approximately 40% of the patients were found to be smokers and drinkers. The most common aggravating factor in the authors' study was stress (50%), followed by trauma (39%) and weather condition (35%). However, one-quarter of the patients noticed that alcohol aggravated their diseases. Regarding associated symptoms, arthralgia and/or arthritis was reported in 15.6% of the patients, which

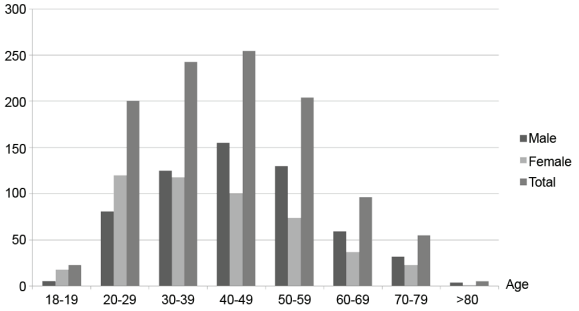

Fig. 1 Age and sex distribution in psoriasis patients (n = 1,082)

Table 1. Demographic data of psoriasis patients in the author's study

Variable	No. of patients (%)
Family history (n = 1,082)	186 (17.2)
First degree relative	132 (71.0)
Second degree relative	54 (29.0)
Co-existing diseases (n = 1,082)	359 (33.2)
Hypertension	128 (11.8)
Diabetes mellitus	99 (9.1)
Dyslipidemia	40 (3.7)
HIV	19 (1.8)
Hepatitis	14 (1.3)
Gout	9 (0.8)
Asthma	9 (0.8)
Cardiovascular disease	9 (0.8)
Malignancy	6 (0.6)
Others	156 (14.4)
Smoking habits (n = 1,008)	
Never smoke	628 (62.3)
Smoke	380 (37.7)
Alcohol intake (n = 1,006)	
Never drink	579 (57.6)
Drink	427 (42.4)
Aggravating factors* (n = 1,082)	
Stress	544 (50.3)
Trauma	422 (39.0)
Weather condition	376 (34.8)
Alcohol	256 (23.7)
Lack of sleep	169 (15.6)
Infection	162 (15.0)
Food	154 (14.2)
Drugs	40 (3.7)
Others	43 (4.0)

affected predominantly in peripheral joints rather than the axial joints. Pruritus was reported in 11.6% of the patients (data were not shown here).

Clinical types of psoriasis in this study are shown in Table 2. The majority of patients had plaque type (72.8%) and the second most common was guttate type (22.7%). Scalp was the most common area of skin involvement at the onset of disease. Nail abnormalities were detected in about half of our patients. The authors' study found that nail involvement was significantly related to arthralgia and/or arthritis ($p < 0.001$). However, the association between specific type of nail abnormality and arthralgia/ arthritis could not be demonstrated ($p > 0.05$). There was no relationship between palmoplantar psoriasis and smoking ($p = 0.853$).

Two-thirds of the patients had mild psoriasis or had PASI score less than 10 whereas the remaining had moderate to severe disease severity (PASI score > 10). The majority of patients received topical treatments in which topical corticosteroids were the most commonly used. One-third of the patients were prescribed systemic anti-psoriatic agents and nine percent of the patients underwent phototherapy (see Table 3). It was found that patients who received all modalities of treatments or both topical and systemic treatments significantly had a higher PASI score compared to those who only had topical treatment ($p < 0.0001$, Kruskal-Wallis test).

Table 4 shows factors associated with psoriasis severity. Sex, history of smoking, alcohol intake, and nail abnormalities were shown to relate with disease severity by univariate analysis. Nevertheless, the multivariate analysis revealed that only alcohol intake, pitting nails, and onychodystrophy were associated with severe psoriasis.

Table 2. Clinical findings of psoriasis patients

Variable	No. of patients (%)
Type of psoriasis (n = 1,082)	
Plaque type	788 (72.8)
Guttate type	246 (22.7)
Palmoplantar type	15 (1.4)
Erythroderma type	11 (1.0)
Pustular type	13 (1.2)
Inverse type	9 (0.8)
Site of lesions at onset of psoriasis (n = 1,082)	
Scalp	494 (45.7)
Trunk	214 (19.8)
Legs	201 (18.6)
Arms	154 (14.2)
Hands	45 (4.2)
Face	40 (3.7)
Feet	36 (3.3)
Intertriginous area	20 (1.8)
Nail involvements* (n = 1,005)	578 (57.5)
Onycholysis	402 (69.6)
Pitting nails	362 (62.6)
Onychodystrophy	240 (41.5)
Subungual hyperkeratosis	175 (30.3)
Oil spots	105 (8.2)

* One patient might have more than one type of nail abnormalities

Discussion

The epidemiological study of psoriasis varies among studies depending on the location and study methods. Previous publications from Malaysia, Japan, and India showed that psoriasis was more common in

Table 3. Treatments in psoriasis patients

Treatments	No. of patients (%) n = 1,082
Topical treatments*	1,008 (93.2)
Topical steroid	968 (96.3)
Coal tar	811 (80.5)
Vitamin D3	180 (17.9)
Anthralin	8 (0.8)
Others	8 (0.8)
Systemic treatment*	363 (33.5)
Methotrexate	310 (85.4)
Retinoids	74 (20.4)
Corticosteroids	29 (8.0)
Cyclosporine	9 (2.5)
Others	6 (1.7)
Phototherapy*	96 (8.9)
PUVA	50 (52.1)
Broadband UVB	4 (4.2)
Narrowband UVB	61 (63.5)

PUVA = psoralen combined with ultraviolet A; UVB = ultraviolet B

* One patient might have more than one type of treatment

Table 4. Factors associated with disease severity

Factors	Crude			Adjusted		
	OR	95% CI	p-value	OR	95% CI	p-value
Age						
< 40 years (type I)	1.12	0.85-1.46	0.434	1.38	0.95-2.00	0.091
≥ 40 years (type II)	1			1		
Sex						
Female	1			1		
Male	1.59	1.21-2.10	0.001*	0.77	0.48-1.25	0.293
Diabetes mellitus	0.82	0.50-1.33	0.420			
Hypertension	1.00	0.66-1.51	0.981			
Dyslipidemia	1.05	0.52-2.12	0.901			
Cardiovascular disease	0.34	0.43-2.75	0.312			
HIV infection	1.62	0.63-4.16	0.315			
Family history of psoriasis	1.16	0.81-1.64	0.419			
Smoking habits	1.62	1.22-2.16	0.001*	0.90	0.54-1.51	0.695
Alcohol intake	1.76	1.33-2.34	<0.001*	1.78	1.07-2.94	0.026*
Arthritis	1.33	0.93-1.90	0.119	1.46	0.86-2.50	0.165
Nail involvement	2.99	2.18-4.09	<0.001*			
Pitting nails	3.31	2.31-4.73	<0.001*	1.91	1.19-3.07	0.007*
Oil spots	2.46	1.41-4.30	0.002*	1.42	0.76-2.67	0.271
Onycholysis	2.31	1.63-3.28	<0.001*	1.16	0.74-1.82	0.528
Onychodystrophy	3.57	2.39-5.31	<0.001*	2.16	1.33-3.51	0.002*
Subungual hyperkeratosis	3.18	2.04-4.98	<0.001*	1.51	0.87-2.60	0.140

OR = odds ratio; CI = confidence interval
Adjusted for age, sex, smoking, drinking, arthritis, pitting nail, oil spot, onycholysis, onychodystrophy, subungual hyperkeratosis
* $p < 0.05$

male with male to female ratio from 1.5:1 to 2.5:1[4,5,12]. Similarly, the authors' result revealed that male was slightly predominant. However, reports from Spain and England showed that both sex were equally affected[13,14]. Psoriasis can occur at any age and the peak age of onset was mostly between 15 to 30 years old[1]. The authors' data illustrated that the peak age of onset was between 40 to 49 years, which was comparable to report from Malaysia[4].

Henseler and Christophers[15] proposed that psoriasis can be classified into two types; type I psoriasis which occurs in patients age before 40 years and is associated with positive family history and more disease severity, and type II which is found in patients age over 40 years. Ferrandiz et al[16] studied 1,774 psoriatic patients with early and late onset in Spain and concluded that the group with early onset (age before 30 years) related to a higher incidence of family history and more extensive disease. In contrast, the report of 515 cases from Pakistan did not find such association[17]. The present results showed that patients' age before 40 years had a significantly higher positive family history of psoriasis. Nevertheless, the disease severity was similar.

The association between psoriasis and the metabolic syndrome was described in many studies[18-20]. Cohen et al[19] conducted a large case-control study among approximately 65,500 subjects and revealed that psoriasis was significantly related to ischemic heart disease, diabetes mellitus, hypertension, and obesity. The present study likewise showed that co-existing disease occurred in descending order of frequency was hypertension, diabetes mellitus, and dyslipidemia. Recently, it has been well established that psoriasis is

a chronic immune mediated disorder. Th-1 and Th-17 cytokines, which are the main mediators of this disease, play a role not only in the pathogenesis of psoriasis but also in the pathogenesis of metabolic syndrome and cardiovascular diseases. That is why numerous studies demonstrate the association between psoriasis and these diseases[19,21-24].

In the present study, smoking and alcohol intake were reported in one-third of the patients. Previous studies revealed that smoking was one of the risk factors for psoriasis and related to disease severity[8,20,25]. Moreover, alcohol consumption was also related to the onset of psoriasis in male patients and non-light beer intake was associated with developing psoriasis among women[26,27]. Stress was demonstrated as the most common aggravating factor for psoriasis in the author's study. Although the association between stress and disease activity remains debatable, the prevalence of suicidal idea among psoriasis patients was found to be as high as 10%[26-28]. Therefore, psoriasis patients should be advised to avoid smoking, alcohol consumption, and significant stress.

Joint involvement is common among patients with psoriasis and usually occurs after the onset of skin lesion. The prevalence of psoriatic arthritis among psoriasis patients varies from 5.8% up to 19%[29-31]. In addition, nail changes can be found in up to 40% of patients with psoriatic arthritis[1]. The authors' data revealed that 15.6% of patients had joint involvement and 57.5% had nail involvements. Furthermore, the significant association between nail and joint involvement was also demonstrated in the authors' study as same as in the earlier report[32].

Various risk factors including body mass index, smoking, obesity, comorbid diseases and family history were reported to have a correlation with severe psoriasis[8,33,34]. The present study demonstrated that male gender, smoking, alcohol intake and nail abnormalities especially pitting nails and onychodystrophy were associated with severe psoriasis.

In conclusion, the authors presented demographic data of Thai psoriasis patients in a large number of population. These data would be beneficial for national public health development of Thailand in order to provide the better care for Thai psoriasis patients.

Potential conflicts of interest

None.

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ลักษณะทางคลินิกของผู้ป่วยคนไทยโรคสะเก็ดเงิน

สุขุม เจียมตน, ป่วน สุทธิพินิจธรรม, กนกวลัย กุลทนันทน์, ลีนา จุฬาโรจน์มนตรี, ชนิษฎา วงษ์ประภารัตน์, นฤมล ศิลปอาชา, วรารัตน์ สิริกุตตา

วัตถุประสงค์: *เพื่อศึกษาลักษณะทางคลินิก ปัจจัยที่กระตุ้นให้โรคกำเริบ ปัจจัยที่เกี่ยวข้องกับความรุนแรงของโรค และการรักษาโรคสะเก็ดเงินในผู้ป่วยคนไทย*

วัสดุและวิธีการ: *ทำการศึกษาย้อนหลังในผู้ป่วยโรคสะเก็ดเงินที่มารับการรักษาที่หน่วยตรวจโรคผิวหนัง โรงพยาบาลศิริราช ตั้งแต่เดือนกรกฎาคม พ.ศ. 2545 จนถึงเดือน กรกฎาคม พ.ศ. 2551*

ผลการศึกษา: *ผู้ป่วยที่ศึกษาทั้งหมดมีจำนวน 1,082 ราย อัตราส่วนเพศชายต่อเพศหญิงเท่ากับ 1.2:1 กลุ่มอายุที่พบเป็นโรคมากที่สุด คือ 40-49 ปี ปัจจัยกระตุ้นให้โรคกำเริบที่พบบ่อยคือความเครียด (ร้อยละ 50) ตามด้วยการแกะเกา (ร้อยละ 39) และสภาพอากาศ (ร้อยละ 35) ผู้ป่วยส่วนใหญ่เป็นโรคสะเก็ดเงินแบบ plaque type (ร้อยละ 72) ปัจจัยที่สัมพันธ์กับการเป็นโรครุนแรง (คะแนน PASI > 10) ได้แก่ เพศชาย การสูบบุหรี่ การดื่มเครื่องดื่มที่มีแอลกอฮอล์ การมีความผิดปกติของเล็บ*

สรุป: *การศึกษานี้เป็นการศึกษาข้อมูลพื้นฐานของโรคสะเก็ดเงินในผู้ป่วยไทยจำนวนมาก ซึ่งข้อมูลนี้อาจก่อให้เกิดประโยชน์ต่อการสาธารณสุขในการดูแลผู้ป่วยโรคสะเก็ดเงินอย่างองค์รวมต่อไปในอนาคต*