Volume 26 | Jul 2011 | ISSN: 1511-5356

Malaysian Journal of Dermatology

JURNAL DERMATOLOGI MALAYSIA

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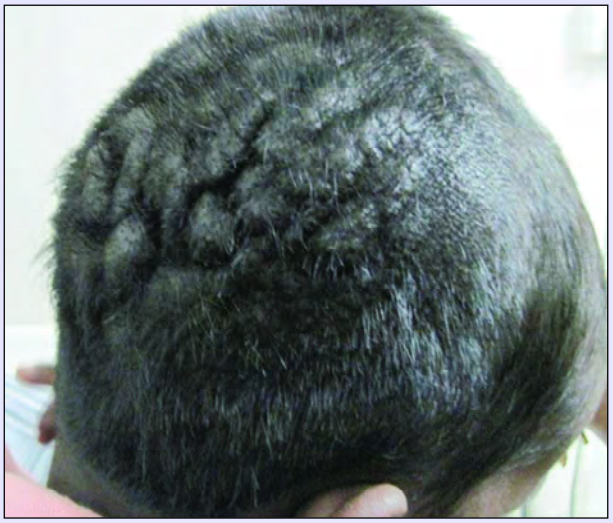
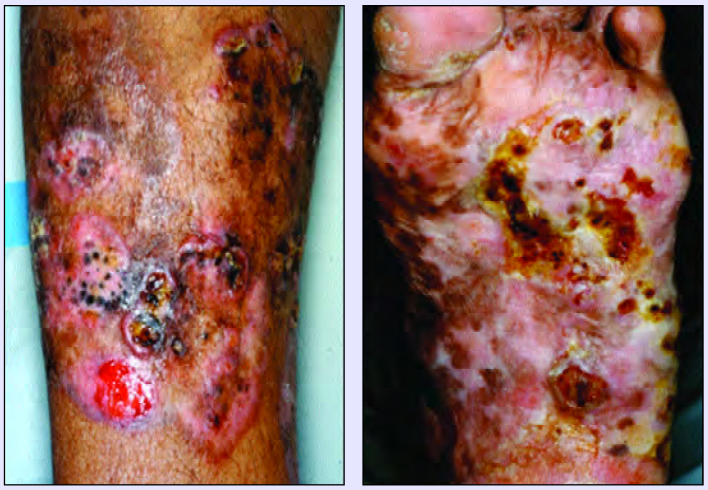
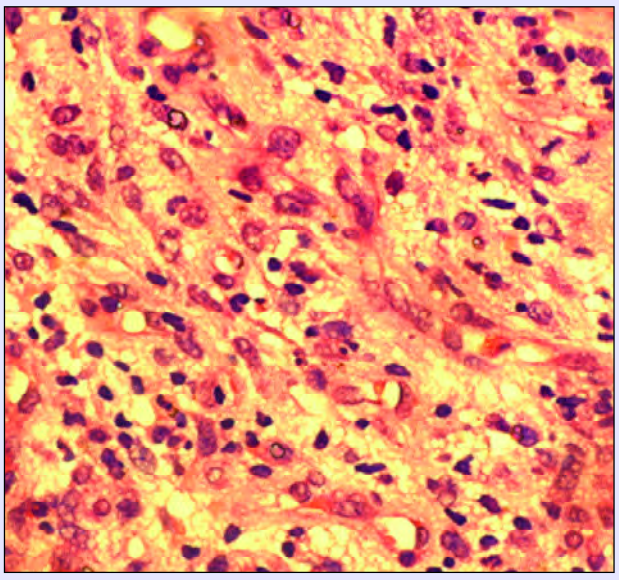
Highlights



***Bull dog* skin**



25 Watch out for this



27 Test your CPC skill

Editorial

In the first decade of 21st Century, under the stewardship of Dr. Stevens Chow Kim Wing, **Asian Academy of Dermatology & Venereology** was formed with members consisted of senior dermatologists from Asian countries.

Dr Henry Foong established an **International Virtual Grand Round in Dermatology** in 2000 which is a web based global dermatology network and gathering place for dermatologists. The Malaysian Dermatological Society website was created by Dr Allan Yee in 2006 and is located at www.dermatology.org.my. This website has facilitated rapid communication among members.

In the century too, **Advance Masters course in Dermatology** was set up in *Universiti Kebangsaan Malaysia* which is the brainchild of Puan Sri Dr Suraiya Hani Hussein. The move towards upgrading of post-graduate training has resulted in trainees coming up with thesis and writing original scientific articles.

The training on use of **Dermatology terminology** to describe skin sign was **introduced to primary care providers** to facilitate communication between clinicians and also with the paramedics. The introduction of **Dermatology nursing care training to non-dermatology nursing personnel** at primary and secondary care levels have enabled patients to receive basic skin nursing at first encounter. Another Malaysian First is when 2 nurses wrote their **thesis in Dermatology nursing care** at **nursing degree course** in the local University.

On November 2010, **Malaysian Journal of Dermatology** which was started in 1987 has been accepted in **West Pacific Region Index Medicus (WPRIM)**. This enables Asian scientific papers to be viewed in the net and knowledge shared with our counterparts in other countries.

Editor in Chief
Malaysian Journal of Dermatology

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Case Report*
A report of 400-600 words, illustrated by no more than three illustrations. This category offers a means for rapid communication about a single subject.

Clinical Trial
An article of 700-1200 words concerning a drug evaluation. This category provides rapid publications and is meant to be a succinct presentation with a minimum of graphs and tables.

Commentary*
An editorial 700-1200 words in length with approximately five references. The author may express his or her opinion without complete documentation.

Clinicopathological Challenge
A photographic essay that includes both clinical and pathological photographs in color. The diagnosis and legends for the photographs should be listed after the references in the article. The article should be no more than 2-3 pages in length.

Correspondence*
Letters to the editor and short notes. Contributions should not exceed 600 words, two figures, and 10 references.

Dermatological Surgery
An article relating to the surgical aspects of treatment. Article types may include Review, Report or Case Report Format.

Original Article
An original article including, whenever possible, an Introduction, Materials and Methods , Results, Comment, and References. A Structured Abstract of not more than 240 words must be included. It should consist of four paragraphs, labelled Background, Methods, Results, and Conclusions. It should describe the problem studies, how the study was performed, the main results, and what the author(s) concluded from the results.

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*No abstract required

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Refer to patients by number or letters; names or initials should not be used.

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Send illustrations as tiff or jpeg files. In the case of photomicrographs, the stain type and original magnification should be stated. Each figure should bear a reference number corresponding to a similar number in the text.

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Editor-in-Chief (Administrative)
Rohna Ridzwan, MRCP
Email : rohnaridzwan@yahoo.com

Editorial Office
Malaysian Dermatological Society
Rumah Dermatolgy
2-16, 16th Floor, Blk 2 (Remis)
Pantai Panorama Condominium
Jln 112 Off Kerinchi
59200 Kuala Lumpur, Malaysia

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Pantai Panorama Condominium
Jalan 112, Off Kerinchi
59200 Kuala Lumpur, Malaysia

MALAYSIAN J OF DERMATOLOGY
ISSN 1511-5356

Published by Dermatological Society of Malaysia twice a year from year 2009 (July and December issues)

Printed by Cetak Sri Jaya, Jalan Ambong Kanan 3, Kepong Baru, 52100 Kuala Lumpur, Malaysia.

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Contents

GENERAL DERMATOLOGY - Original Article

Erythroderma - A retrospective study with special emphasis on good prognosis

Peter Ch'ng WB[1], *MRCP*, Adam B[2], Rohna R[1], *MRCP*

Abstract

Background Erythroderma is a serious condition in itself, quite apart from hazards associated with the underlying disease, and is sometimes fatal. Prognostic studies are rare in the literature and to date there are no published studies to identify the factors that can determine good prognosis.

Objectives The aim of the study is to determine the factors that can prognosticate the good outcome of erythroderma.

Methodology Cross sectional study from patients diagnosed to have erythroderma between 2003 and 2007 were analyzed with regard to age, sex, race, underlying medical illness, aetiology, duration of rash before diagnosis of erythroderma, response to topical therapy and prognosis.

Results Four variables (aetiology, gender, duration of rash before being diagnosed as erythroderma and response to topical therapy) were associated with good prognosis. These variables were statistically significant from univariate analysis. When these variables were included into the binary logistic model, the study did not have enough evidence to proof that 'aetiology' and 'gender' can determine good prognosis. Response to topical therapy and shorter duration of rash (equal and less than 120 days) were significant with odds ratio (CI) of 4.11 (1.556, 10.885) and 4.608 (1.903, 11.155) respectively.

Conclusion Shorter duration of rash and response to topical therapy are important factors to determine a good prognosis.

Keywords *exfoliative dermatitis, generalised erythema, outcome*

Introduction

Erythroderma also known as generalized exfoliative dermatitis is characterized by erythema affecting more than 90% of the body surface area accompanied by a variable degree of scaling[1].

Correspondence
Peter Ch'ng Wee Beng
Department of Dermatology
Selayang Hospital, Lebuhraya Selayang-Kepong
Batu Caves 68100, Selangor, Malaysia
E-mail : p_chng@yahoo.com

[1] Hospital Selayang, Selangor, Malaysia
[2] Clinical Research Centre Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

Erythroderma is a serious condition in itself, besides hazards associated with the underlying disease, and is sometimes fatal despite skilled management. It is particularly dangerous in elderly people. Reported death rates have varied from 18 to 64%,[2-4] but with modern therapy the rate is probably lower.

Prognostic studies are rare in the literature and to date there are no published studies to identify the factors that can determine good prognosis[5-10].

This is important when informing the patient or family members regarding the prognosis of the patient. Hence the aim of the study is to determine the factors that can prognosticate the good outcome

of erythroderma. Furthermore, we also looked at various clinical data of these patients to have a better understanding of the disease.

Materials and methods

A cross sectional study of patients diagnosed with erythroderma, in local Hospital between 2003 and 2007, were analyzed. The information was collected from the patients' records and included age, sex, race, underlying medical illness, aetiology, duration of erythroderma, response to topical therapy and prognosis. Idiopathic erythroderma will only be considered if other aetiology had been ruled out and a skin biopsy has been done for the patient.

We defined poor prognosis as having relapse, persistent erythroderma or death and good prognosis as having complete or partial resolution of erythroderma. Partial resolution of erythroderma is defined as erythema affecting less than 90% of the body surface area.

Statistical method

The analysis was carried out using PASW 18.0. Categorical variable were reported in frequency with percentage and numerical variable were reported in median and inter quartile range (IQR). Appropriate statistical test was used after considered statistical assumption to determine the association between selected risk factors towards bad or good prognosis. The statistical tests used were Chi square test, Fisher exact test and Mann Whitney U test. Binary logistic regression was used to test the risk factors simultaneously using stepwise with Backward Likelihood Ratio method and removal item procedure used was 0.50. The P-value and Odds ratio with confidence interval were reported to determine the strength of factors that can prognosticate the good outcome of erythroderma.

Results

Prognosis

5 out of the 124 patients who had missing data or defaulted follow up, were excluded in the analysis. 82 out of 119 patients (68.9%), had good prognosis while 37 (31.1%) had poor prognosis. 13 patients had died and none of the patients, the immediate cause of death was directly related to erythroderma. 4 patients died during hospital admission for erythroderma of which 2 died of acute coronary syndrome, 1 sudden death and 1 multi-organ failure. Of the 9 patients whose death was during the study period but not during the admission for erythroderma, one died of advanced stomach carcinoma, another died of organophosphate poisoning while the cause for the other 7 were attributed to sepsis. As for the aetiology of erythroderma among those who died, 5 patients were idiopathic, 4 patients were having psoriasis and 4 were due to drugs.

Four variables (gender, duration of rash before being diagnosed as erythroderma, response to topical therapy and aetiology) were associated with good prognosis. These 4 variables were statistically significant from univariate analysis. (Table 1) When these 4 variables were included into the binary logistic model, the Nagelkerke R square was acceptable (0.322) but the analysis did not have enough evidence to prove that 'aetiology' and 'gender' can determine good prognosis.

This study has enough evidence to prove that response to topical therapy and shorter duration of rash (equal and less than 120 days) were significant with odds ratio (CI) of 4.116 (1.556, 10.885) and 4.608 (1.903, 11.155) respectively. The difference between the median for duration of rash before being diagnosed as erythroderma in days for bad and good prognosis were 120 days and 25.5 days respectively.

Patients who responded to topical therapy are 4.1 times more likely to have good prognosis compared to those patients who did not respond to topical therapy. Those with shorter duration of rash (equal and less than 120 days) were 4.6 times more likely to have good prognosis compared to those patients with longer duration (more than 120 days) of rash.

However for 'aetiology', the strength of odds ratio does exist especially for 'drug induced' (P value = 0.493, OR = 1.665, CI = 0.387, 7.169) and 'contact dermatitis' (P value = 0.207, OR = 5.262, CI = 0.399, 69.443) as compared to 'idiopathic erythroderma'. Besides that, Female also has the impact on good prognosis (P value = 0.217, OR = 1.953, CI = 0.675, 5.646)

Clinical data

Majority (46%, n=57) of the patients were more than 60 years old. 78 (63%) were male and 46 (37%) were female. More than half of our patients were Malays followed by Chinese, Indian and others. (Table 1) As for the underlying medical illness, 26 (21%) had diabetes mellitus, 47 (37.9%) had hypertension and 18 (12.9%) had ischaemic heart disease.

Table 1 Profile of patients with guarded and good prognosis

Profiles	Guarded prognosis n(%)	Good prognosis n(%)	Overall **** n(%)	p-value
Age Group (yrs)				0.711 *
<1	0 (0.0)	3 (100.0)	5 (4.0)	
1-20	2 (20.0)	8 (80.0)	10 (8.1)	
21-40	6 (33.3)	12 (66.7)	18 (14.5)	
41-60	13 (38.2)	21 (61.8)	34 (27.4)	
>60	16 (29.6)	38 (70.4)	57 (46.0)	
Gender				0.014
Male	29 (39.2)	45 (60.8)	78 (62.9)	
Female	8 (17.8)	37 (82.2)	46 (37.1)	
Race				0.324 *
Malay	18 (26.1)	51 (73.9)	71 (57.3)	
Chinese	14 (35.0)	26 (65.0)	42 (33.9)	
Indian	4 (50.0)	4 (50.0)	9 (7.3)	
Others	1 (50.0)	1 (50.0)	2 (1.6)	
Status of DM				0.318
Yes	6 (23.1)	20 (76.9)	26 (21.0)	
No	31 (33.3)	62 (66.7)	98 (79.0)	
Status of IHD				0.988
Yes	5 (31.3)	11 (68.8)	18 (12.9)	
No	32 (31.1)	71 (68.9)		
Status of HPT				0.596
Yes	13 (28.3)	33 (71.7)	47 (37.9)	
No	24 (32.9)	49 (67.1)	77 (62.1)	
Duration of rash (days)**	120 (807.3)	25.5 (83.0)	30 (231.5)	0.009 ***
Duration of rash (days) in category				
≤120 days	17 (20.5)	66 (79.5)	83 (69.7)	<0.001
>120 days	20 (55.6)	16 (44.4)	36 (30.3)	
Secondary Infection				0.120
Yes	6 (20.0)	24 (80.0)	33 (28.2)	
No	29 (35.4)	53 (64.6)	84 (71.8)	
Response to topical				0.001
Yes	22 (23.7)	71 (76.3)	96 (78.0)	
No	15 (57.7)	11 (42.3)	27 (22.0)	
Aetiology				
Drugs	9 (18.4)	40 (81.6)	49 (39.5)	0.016 *
Psoriasis	16 (51.6)	15 (48.4)	31 (25.0)	
Idiopathic	6 (40.0)	9 (60.0)	17 (13.7)	
Contact	1 (11.1)	8 (88.9)	9 (7.3)	
Others	5 (33.3)	10 (66.7)	18 (14.5)	

**P-value derived from Fisher's exact test **Reported Median (IQR) ***P-value derived from Mann Whitney U test*
*****The size of sample were different in the overall due to missing data*

33 (28.2%) of the patients were complicated with secondary bacteria skin infection. 96 (78%) of the patients had resolution of erythroderma with topical therapy whereas 27 (22%) required systemic steroids.

Aetiology

Drugs were the commonest cause of erythroderma, followed by psoriasis, idiopathic, contact dermatitis and others. Out of the 18 causes for others, 6 were due to atopic dermatitis, 6 photocontact dermatitis, 2 ichthyosis, 1 seborrhoeic dermatitis, 1 food, 1 contrast media and 1 due to Werner Syndrome. Among the drugs, antibiotics were the most frequent followed by allopurinol, phenytoin, beta blocker, supplements and analgesic. The commonest cause of contact dermatitis, was liniment followed by cement (Table 1).

Discussion

The prognosis for patients with erythroderma varied in different published studies. Nicolis and Helwig[4] recorded 87 of 108 deaths related to the dermatosis and the dermatosis cleared in only a small number of patients. As for Abrahams et al[2], 73 out of 101 cases reported recovery and 19 deaths as a complication of erythroderma. Hasan and Jansen[3] reported no death attributed to erythroderma; 17 out of 35 patients (49%) had completely recovered, while another 12 patients (34%) had improved.

Although none of the immediate cause of death in our study was directly related to erythroderma, it is difficult to determine whether the death was due to the complication of erythroderma or due to natural cause. This is because majority of the death in our study was due to sepsis or cardiac complication, which can happen as a complication of erythroderma. On the other hand, most of our patients were more than 60 years old and a proportion of the patients may die of natural cause during the study period.

In our study we not only looked at mortality but we also looked at factors that can prognosticate the good outcome of erythroderma. In our patients, the group associated with the best prognosis was that related to drugs and such findings have been observed in literature[16-18].

Besides drugs, contact dermatitis causing erythroderma was associated with good prognosis as compared to idiopathic cause. This is because the aetiology is known and therefore by removing the cause, it will lead to resolution of erythroderma. Where else for idiopathic, it tends to have relapse or being persistent because the main precipitant has yet to be identified. Although none of the patient in our study was diagnosed to have erythroderma secondary to cutaneous lymphoma or other malignancy during the study period, it is possible that some of them may evolve to malignancy later on.

Table 2 Aetiology of erythroderma (N=119)

Aetiology	n (%)	Total
Drugs		
Antibiotics	11 (22.4%)	49 (39.5%)
Others	9 (18.4%)	
Unsure Exact Drug	9 (18.4%)	
Allopurinol	8 (16.3%)	
Phenytoin	4 (8.2%)	
Beta Blocker	3 (6.1%)	
Supplements	3 (6.1%)	
Analgesic	2 (4.1%)	
Psoriasis		31 (25%)
Idiopathic		17 (13.7%)
Contact Dermatitis	4 (44.4%)	9 (7.3%)
Liniments	3 (33.3%)	
Cement	2 (22.2%)	
Others		18 (14.5%)

Shorter duration of rash before being diagnosed to have erythroderma tends to have good prognosis. One possibility is that drugs and contact dermatitis commonly present with a short duration of rash and therefore lead to good prognosis.

Females are 21.4% more likely to have good prognosis than males. It is perhaps due to the small sample size, the test could not detect the difference. A study done by Sigurdsson et al[11] suggested that there is a possibility that women with erythroderma have a better prognosis than men.

Patients who responded to topical therapy were more likely to have a good prognosis compared to those patients who did not respond to topical therapy. This is because patients who have relapses or persistent erythroderma tend to be resistant to topical therapy and require oral steroid.

Majority of our patients were more than 60 years of age which is similar to the study performed by Sigurdsson et al[11] in which the average age of their patients was 61.

As shown in Table 2, aetiologies of erythroderma are rather similar as compare to other series[2-4, 11-17].

However in our study, there was a significantly larger proportion of erythroderma secondary to adverse drug reaction especially due to antibiotics and allopurinol. This warrants particular attention and may be due to high rate of injudicious prescription of these drugs in Malaysia.

Conclusion

Shorter duration of rash and response to topical therapy are important factors that can prognosticate the good outcome of patients with erythroderma. Gender (female) and aetiology (drugs and contact allergen) also have contribution to good prognosis, however due to small sample size, the results were not significant.

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GENERAL DERMATOLOGY - Original Article

Clinical and related factors in Acne - Experiences from Can Tho, Viet Nam

Tran Thi Hanh

Abstract

Background: Acne is a common disease in teenagers and young adults. This study was conducted to provide physicians with a better understanding of the disease and to improve their advice to patients.

Objective: To define the prevalence of acne, it's related factors and its psychological impact on the pupils at Chau Van Liem Senior High School.

Method: A cross sectional descriptive study including 405 pupils in 10th, 11th, 12th grades was carried out by means of medical examination, and interviews based on questionnaires.

Results: The prevalence of acne in Chau Van Liem Senior High School pupils is 82.5% overall. Separately, the incidence was slightly higher for boys with 83.9% than girls with 81.7%. Most of these pupils had moderate acne (51.5%), with 46.7% having mild acne. Only 1.8% had the disease at severe. Moderate acne was 1.72 times more common in males than females (p = 0.02, OR = 1.72). The essential lesions included oily skin, comedone, and papules, accompanied with pigmentation and/ or scar. One risk factor associated with acne was identified as the habit of using cosmetics (OR=2.12).The research also identified the differences between boys and girls in their habits related to acne. These included: the concern about acne (p=0.003), facial massage (p=0.02), using facial milk (p=0.001), using cosmetics (p=0.001). Acne led to diffident (p=0.01), depression (p=0.05), and ashamed (p=0.003). Boys with acne were less communicative than girls (p=0.03).

Conclusion: The prevalence of acne in Chau Van Liem Senior High School pupils is 82.5%. Pupils still display bad habits like acne squeezing, applying cosmetics, using mixed- cream bought from the store or self concocted mixtures of locally obtainable creams including steroids, aspirin, antibiotics, vitamins, carelessly applying corticoid-contained medicine which harm their skin. Acne also affects their mental health, emotional well being, and performance in school, family relationships, and friendships.

Keywords *Vietnam, adolescence, behaviour, skin lesion*

Introduction

Acne vulgaris is a self limited disorder of the pilosebacious unit that is seen primarily in adolescent [9,13,17,18]. This is one of the most common disease, with 85% of all teenagers (18) being affected to some degree. Generally, involution of the disease occurs before age 25.

In prolonged cases, the sequelae can be life long; with pitted hypertrophy scar formation that can cause psychological or emotional harm varies from patient to patient. In Viet Nam, acne is a very common disease, most of the patients here practice self treatment by using cosmetics, using mixed cream bought from the store or self concocted mixtures of locally obtainable creams including steroids, aspirin, antibiotics and vitamins.

Correspondence
Tran Thi Hanh
Can Tho University of Medicine and Pharmacy
71A1 (Ho Tung Mau) TTTM
Cai Khe - Ninh Kieu District
Can Tho - Viet Nam
E-mail : tthanh@ctump.edu.vn

In addition, they take self prescribed medicine, squeeze the affected area, and have facial massage. These types of behaviour worsen acne and form scars. This study was conducted to provide physicians with a better understanding of the disease and to improve their advice to patients.

Materials and methods

Research Design : Cross-sectional Study

Subjects/Respondents
405 pupils in 10th, 11th and 12th grades who were studying from October 2006 to April 2007 and satisfied all the sampling criteria as outline below.

Inclusion Criteria
- All the pupils above were studying during the time of data collection
- Appropriate age: Grade 10 (15 years old), Grade 11 (16 years old), Grade 12 (17 years old)
- Consent to participate and be present at school

Sample
Until my research, there had not been any study completed showing the prevalence of acne among the pupils in the senior high school here in Viet Nam. Thus, P was defined as 50% to get the maximum sample.

$$n = \frac{Z^2_{1-\alpha/2} P(1-P)}{d^2} = \frac{1,96^2 \times 0,5 \times (1-0,5)}{0,05^2} = 384$$

Sampling process
Step 1 : Select Chau Van Liem Senior High School.

Step 2 : Contact the Head Board to arrange a convenient time for data collection.

Step 3 : Make a list of pupils under stratifications, Cluster Random Sampling was chosen.

Data collection:
Individual interviews were given to complete the survey questions after a pilot tested for comprehension in a group of 10 patients. These interviews were conducted individually with one pupil being interviewed by one researcher. Respondents who had acne would be examined, diagnosed by a dermatologist (Tran Thi Hanh).

Typical cases would be illustrated by photograph. Determination of acne severity (mild, moderate, severe) based on the number and type of lesions; a standardized system was outlined below:

Severity	Definition
Mild	< 20 comedones, or < 15 inflammatory lesions, or < 30 total lesions
Moderate	20 to 100 comedones, or 15 to 50 inflammatory lesions, or 30 to 125 total lesions
Severe	> 5 cysts, or total comedone count > 100, or total inflammatory lesion count > 50, or > 125 total lesions

STATISTICS:
The statistical analysis was performed using the SPSS software version 15.0 and Excel.

MEDICAL ETHICS:
This research is non-invasive, in compliance with the principles of human research set forth by the Helsinki declaration. Students are entitled to attend and withdraw at anytime; they are examined and treated if required

RESULTS:
405 cases were included, of which 143 were males and 262 females. Ages ranged from 15 years old (pupils in grade 10) (30.4%), to 16 years (pupils in grade 11) (29.9%) and 17 years (pupils in grade 12) (39.8%).

Table 1 The prevalence of acne with respect to gender

	Diagnosis	
Gender	**Acne**	**No Acne**
	n=334 (%)	n=71 (%)
Male	120 (83.9)	23 (16.1)
Female	214 (81.7)	48 (18.1)
Total (n=405)	334 (82.5)	71 (17.5)

$\chi^2 = 0.32$; $p = 0.57 > 0.05$

Most of acne was seen on oily skinned sufferers. The most common lesions encountered were comedones, then papules and pustules. Nodules and cystic lesions were seen in low proportion.

Table 2 The Skin lesions of acne sufferers

Lesions	Frequency	Percentage
Oily skin	291	87.1%
Comedone	334	100%
Papules	164	49.1%
Pustules	146	43.7%
Nodule	62	18.6%
Cyst	17	8.1%
Hypopigmentation	3	0.9%
Hyperpigmentation	136	40.7%
Pitted scar	111	33.2%
Hypertrophy scar	3	0.9%
Dermatrophy and telangiectasie	26	7.8%

Distribution of acne lesions on the body

Acne lesions were mostly seen on the face 334 (100%), then on the back 95 (28.4%), the chest 41 (12.3%), and the arm 16 (4.8%). On the face, the most common lesions were on the cheek 308 (92.2%), the forehead 281 (84.1%), the nose 279 (83.5%), the chin 207 (62%), and the temple 113 (33.8%).

Distribution of pupils using topical corticoid and mixed cream (steroids, aspirin, antibiotics, self-concocted vitamins): Among 405 cases reported, 76 (18.8%) of the pupils with acne used mixed cream and steroid containing topical products.

Table 3 Correlation between Dermatrophytelangiectasie and using Corticoid containing products (mixed cream, topical drugs)

Using status	Dermatrophy and telangiectasie		P (Fisher's Exact Test)
	Yes	No	
	n=26 (%)	n=308 (%)	
Users (n=61)	8 (13.1)	53 (86.9)	
Non-Users (273)	18 (6.6)	255 (93.4)	0.11
Total (n=334)	26 (7.8)	308 (92.2)	

OR = 2.14. CI: 95% (0.88 - 5.18)

Although no significant association was found by the Chi Square Test but the OR >1 showed that the acne subjects using corticoid had the Odd of dermatrophy and telangiectasie 2,14 times more often than the non acne users.

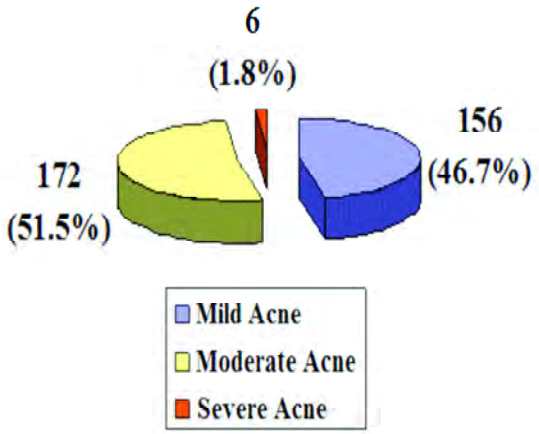

Figure 1 Classification of acne degree

Table 4 Correlation between gender and the degree of acne

Gender	Degree			
	Mild	Moderate	Severe	
	n (%)	n (%)	n (%)	
Male (124)	46 (37.1)	72 (58.1)	6 (4.8)	**P=** 0.02;
Female (n=210)	110 (52.4)	100 (47.6)	0 (0%)	**OR=** 1.72
Total (n=334)	156 (46.7)	172 (51.5)	6 (1.8)	

Concern of acne with respect to gender-Treatment seeking behaviours

282 (84.4%) pupils with acne are concern about their problem. Males appear to be less concern about their acne when compared to females (χ^2= 8.6; p = 0.003). There was an association between this concern and gender. Here there was a big difference with girls wanting to deal with the problem and treat acne through various means such as facial massage, cleaning with facial milk, and using cosmetics. Most of the times boys did nothing and left the problem untreated. Despite the high rate of pupils (84.4%) concerned with their acne there were still high rates of non - treatment (53%), self - treatment (37.4%), treatment at private clinics (6%), beauty salons (0.7%), and only 2.7% of pupils are seen in dermatology clinics.

Table 5 The relationship between diet and acne

Daily Diet	Acne		No Acne		P value
	(+)	(-)	(+)	(-)	
	n (%)	n (%)	n (%)	n (%)	
High lipids (fat, eggs, milk)	194 (85.1)	140 (79.1)	34 (14.9)	37 (20.9)	0.12
High glucide (bread, cereal, cake, sugar	149 (83.2)	185 (81.9)	30 (16.8)	41 (18.1)	0.72
Fruit with high sugar	148 (83.1)	186 (81.9)	30 (16.9)	41 (18.1)	0.75
Fruit with low sugar	240 (83.6)	94 (79.7)	47 (16.4)	24 (20.3)	0.34
Chocolate, cacao	72 (80)	262 (83.2)	18 (20)	53 (16.8)	0.49
High protide (meat, fish)	246 (80.4)	88 (88.9)	60 (19.6)	11 (11.1)	0.053
Vegetable	297 (82.7)	37 (80.4)	62 (17.3)	9 (19.6)	0.7

(+): Eat regularly everyday (-): Eat irregularly

Table 6 Association between facial hygiene, cosmetic use and acne

	Acne	No Acne	Test
Average number of facial cleaning/day	n=334 (4.32)	n=71 (4.54)	T test p=0.31>0.05
Cosmetic use	n=174 (87.9%)	n=24 (12.1%)	χ^2 p=0.01<0.05 OR=2.12

Table 7 Association between behaviors and gender

	Gender		Test
	Male	Female	
Acne squeezing	78 (54.5%)	154 (58.8%)	χ^2 p=0.01
Facial Massage	9 (6.3%)	369 (13.7%)	χ^2 p=0.41
Facial Milk	55 (38.5%)	163 (62.2%)	χ^2 p=0.01
Cosmetic	50 (35%)	148 (56.5%)	χ^2 p=0.001

Impact of acne

Boys with acne were more diffident (p=0.01), depressed (p=0.05), ashamed (p=0.003) than girls.

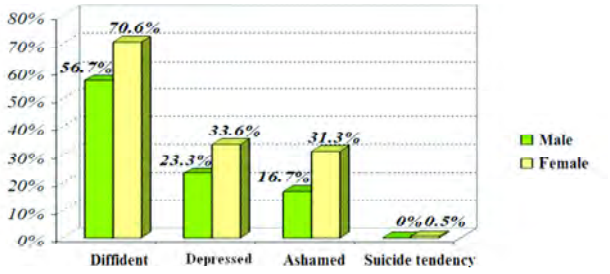

Figure 2 Impact of acne on pupils emotional well being

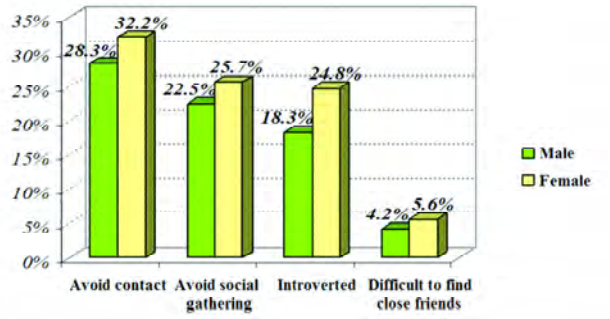

Figure 3 Impact of acne on personal friendships

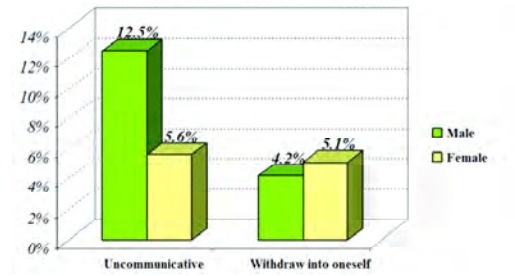

Figure 4 Impact of acne on family relationships

Boys with acne were less communicative than girls (p=0.03).

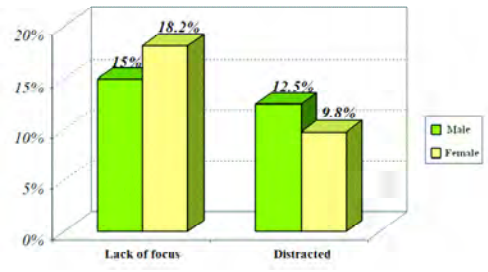

Figure 5 Impact of acne on pupil performance

Discussion

The research has confirmed that acne was a common health problem among adolescents from 15-17 years of age, impacting 83.9% of the males and 81.7% of the females (p = 0.57). The prevalence of acne in both sexes was 82.5%. This figure concur with the results noted by Saurat[17] and Klaus Degit[7,11] who found the rate at 80%, and Julie C Harper[8,9] who showed it at 85-100%. In this study, mild and moderate acne were the most common and occurred in almost equal numbers in both genders. Moderate acne was 1.72 times more common in males than females (p = 0.02, OR = 1.72). This finding was also in line with the literature[18], on acne among young adults which was more severe in males than in females.

Oily skin was the most common contributing factor to the onset of acne. This figure was in line with literature as over excretion of oil usually preceded the acne problem and remained as a factor as the disease progressed unless treated. Comedone was often present as it was the most observed lesion in common acne among young adults in our study. Papules, pustules were lesions of the ongoing inflammation and were observed in high proportions. Other lesions such as nodule, cyst, hypertrophy scar were common in severe acne, particular in adults, or in patients who had complications due to inappropriate treatment. These lesions had low proportions. Specifically, dermatrophy and telangiectasie was a result of an inappropriate treatment, or using steroid containing drugs or cosmetics.

Historically, the relationship between diet and acne has been highly controversial. Whitney P. Bowe[19], have included several studies that he believes are of inferior design in an effort to provide historical context for more recent developments, and to address several dietary factors that, in his opinion, merit further study. Before the 1960s, certain foods were thought to exacerbate acne. However, subsequent studies[6], dispelled these alleged associations as myth for almost half a century. Several studies during the last decade have prompted dermatologists to revisit the potential link between diet and acne. Compelling evidence exists that high glycemic load diets may exacerbate acne[5]. Adebamowo et al[1,2,3] may have provided consistent data in support of an epidemiologically weak association between dairy and acne. Dairy ingestion appears to be weakly associated with acne, and dietary fibers remain to be elucidated. In our study, there were no association between diet and acne. Limitation included the number of the controlled group were much lower than the group with acne problem.

Research has continued to yield more information concerning the aggravating factors of acne. Recognition of the bad habits of the pupils with acne such as acne squeezing and facial massage that would risk worsening and spreading the inflammation, and making acne more serious, and more specifically the role of facial milk and cosmetics in the development of acne. There was a correlation between cosmetic use and gender with the girls using at a much higher rate than the boys. In addition, this study also found a significant correlation between this habit and acne and frequent cosmetic users who had a higher risk (2.14 times) than non users of acne problems. We should educate pupils more about the ingredients contained in facial milks and cosmetics and their connection in producing comedone.

Some research showed a strong association between acne and mental health[4,12,14,16]. This study also found that acne had a psychological impact to patients themselves, to their friendships, to their relationships with families and school performance. The degree of impact is depended on gender where females were more influenced than males. This finding is also noted by Aktan et al[4]. The most common impact was loss of confidence, ashamed, avoiding communication, avoiding social gathering, lacking of focus when studying. According to Rigopoulos et al[15], 48% of high school pupils in Greece said that acne harmed their personal relationships. According to Jancin B[10] 39% of British young adults neglected schools due to their personal shame, 55% said that acne made them could not find girlfriends or boyfriends.

Conclusion

The prevalence of acne in Chau Van Liem Senior High School pupils is 82.5%. Pupils still display bad habits like acne squeezing, applying cosmetics, using mixed- cream bought from the store or self concocted mixtures of locally obtainable creams including steroids, aspirin, antibiotics, vitamins, carelessly applying corticoid-contained medicine which harm their skin. Acne also affects their

mental health, emotional well being, and performance in school, family relationships, and friendships. These conclusions from our study are very essential for our acne prevention school programs.

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GENERAL DERMATOLOGY - Original Article

Adequacy of Care in patient with Psoriasis (ADECAP) Study

Tan WC, Chan LC, Ong KP, Tan SS, Kweh MW, Jeffrey L, Kalaikumar N

Abstract

Introduction: Psoriasis is a chronic recurrent inflammatory skin disease and poses a lifelong burden. Psoriasis is now considered a systemic inflammatory disease. Increasing epidemiological studies have established the role of psoriasis as an independent risk factor in the development of metabolic syndrome and its components. This has led to changes in standard of care recommendations for patients with psoriasis. We conducted a clinical audit on "adequacy of care in patient with psoriasis".

Objective: To examine current trend of practice in the treatment of adults with psoriasis in Dermatology clinic (tertiary referral centre), Penang Hospital. This study also aims to determine the adequacy of care in psoriasis patients in general, and those on systemic agents in specific.

Method: A retrospective study examined all adult psoriasis patients who visited Dermatology Clinic, Penang Hospital within 1st July - 31st July 2009. Only those who have been on follow-up for at least 1 year were included in the study. Demographic characteristics, disease burden and details of psoriasis management were documented and analysed. Standards were derived from recommendations of the British Association of Dermatologists (BAD) and American Academy of Dermatology (AAD).

Results: Of the 112 patients, 67 were males (59.8%). The mean age of patients was 48.8 years. Fifty (44.6%) were Chinese, 35 Malay (31.3%), 26 Indians (23.2%) and 1 foreigner (0.9%). The mean frequency of clinic visit was 8.2. Forty-seven patients required systemic agents to achieve better disease control. Eighty-three (74.1%) patients were offered "Psoriasis Education Programme". Percentage of patients who had their severity scoring done by using the DLQI, BSA & Pain score were 73.2%, 90.2% and 85.7% respectively. Only less than 50% of our patients were offered "Metabolic Syndrome Risk Factors Screening". Of those on systemic agents, only 87.2% and 46.8% of patients, had their baseline and follow up blood investigations done respectively.

Conclusion: The care of psoriasis patients in Dermatology Clinic, Penang Hospital is still not adequate. Particular areas of concern include blood monitoring for those on systemic agents and screening for metabolic syndrome risk factors.

Remedial measures: Guidelines have been designed to create awareness and to educate doctors and patients on psoriasis and its association with metabolic syndrome. This includes a flow chart / tables to facilitate monitoring and screening of patients. Patients will be given pamphlets on the general knowledge on psoriasis, treatments and the risk of co-morbidities.

Keywords *Psoriasis, Standard of Care, Clinical Audit, Metabolic Syndrome*

Correspondence
Tan Wooi Chiang
Department of Dermatology,
Penang Hospital, Penang, Malaysia
E-mail : tanwooichiang@yahoo.com

Introduction

Psoriasis is a chronic recurrent inflammatory skin disease that affects between 1 - 3% of the population and it poses a lifelong burden[1]. Advances in our understanding of the pathophysiology of psoriasis in the last decades have changed our insight of psoriasis and its' management.

Psoriasis is now considered a systemic inflammatory disease[2]. The scientific literature linking psoriasis to metabolic syndrome and its components, as well as atherosclerosis and myocardial infarction has rapidly expanded. Increasing epidemiological studies are establishing the directionality of these associations and the role of psoriasis as an independent risk factor in developing this outcomes[3-9].

This concept has led to changes in standard of care recommendations for patients with psoriasis. Due to increased awareness about treatments and comorbidities combined with increase expectations among patients, there is an urgent need to improve the quality of care for patients with psoriasis.

We conducted a clinical audit on "adequacy of care in patient with psoriasis" in July 2009. The primary objective is to examine current trend of practice in the treatment of adults with psoriasis in the Dermatology clinic, Penang Hospital. The secondary objective is to determine the adequacy of care in psoriatic patients in general, and those on systemic agents in specific.

Methodology

This is a retrospective study reviewing the clinic cards of all psoriasis patients who visited the Dermatology Clinic, Penang Hospital within 1st July - 31st July 2009.

Patient groups and sample

The subjects to be included in this clinical audit are all adult psoriatic patients who have been followed up in Dermatology Clinic for at least 1 year. The newly diagnosed psoriatic patients, or those follow up less than a year are excluded from this study.

Inclusion Criteria

1. Patient confirmed to have psoriasis

2. Patient of age $\geq$ 18 years at the time of study

Exclusion Criteria

1. Patient whom the diagnosis is in doubt

2. The newly diagnosed psoriatic patient or those follow up less than a year in skin clinic, Penang Hospital.

Data sources

The audit criteria require data to be collected from a range of sources, including patient records and admission notes.

Audit criteria and standards

Standards of good care of Psoriasis patients were derived from recommendations of the British Association of Dermatologists (BAD) and American Academy of Dermatology (AAD).

CRITERION 1	Percentage of psoriasis patients being offered "Psoriasis Education Programme"
Exceptions	None
Settings	All
Standard	100%
Definitions	Patients should be offered information to help them make informed decisions about their healthcare. This covers the condition, treatments and the health service providing care.

CRITERION 2	Percentage of patients who had their severity scoring done by using the Dermatology Life Quality Index (DLQI) Body Surface Area (BSA) / Psoriasis Area & Severity Index (PASI) Pain score (if arthropathy)
Exceptions	If patients do not have arthropathy, omit pain score.
Settings	All
Standard	100%
Definitions	Patients should have their severity scoring done. DLQI (Every 6 monthly) BSA / PASI (Every visit) Pain score (Every visit)
CRITERION 3	Percentage of patients offered "Metabolic Syndrome Risk Factors Screening" Obesity (Body Mass Index - BMI / Waist circumference) Hypertension (Blood Pressure) Diabetes Mellitus (Fasting Blood Sugar) Lipid (Fasting Lipid Profile)
Exceptions	Those < 20 years old and with pre-existing metabolic syndrome
Settings	All
Standard	100%
Definitions	Patients should be offered information about psoriasis co-morbidities and screen them annually if $\geq$ 20 years old.
CRITERION 4	Percentage of patients (on systemic agents) had their laboratory investigations done Baseline investigations Follow up monitoring
Exceptions	Those on topical medications alone
Settings	All
Standard	100%
Definitions	Patients on systemic agent should be monitored according to JAAD 2008 guideline.
CRITERION 5	Percentage of patients consented prior to initiation of systemic agents
Exceptions	Those on topical medications alone
Settings	All
Standard	100%
Definitions	Patients should be offered written information to help them make informed decisions about their healthcare. This should cover the condition, treatments and the health service providing care. Information should be available in formats appropriate to the individual, taking into account language, age and physical, sensory or learning disabilities.

Re-audit

If the first data collection and analysis shows room for improvement, an action plan will be developed and the audit re-run once changes to the service have had time to make an impact.

Results

Study Cohort

Of 112 patients, 67 were males (59.8%). The mean age of patients was 48.8 years. Fifty (44.6%) were Chinese, 35 Malay (31.3%), 26 Indians (23.2%) and 1 foreigner (0.9%). The mean frequency of clinic visit was 8.2. Forty-seven patients required systemic agents to achieve better disease control.

Psoriasis Care Pattern (Refer table 1)

Eighty-three (74.1%) patients were offered "Psoriasis Education Programme". Percentage of patients who had their severity scoring done by using the DLQI, BSA & Pain score were 73.2%, 90.2% and 85.7% respectively. Only less than 50% of our patients were offered "Metabolic Syndrome Risk Factors Screening". The details of metabolic syndrome and its' risk factor are shown in table 2. Of those on systemic agents, only 87.2% and 46.8% of patients, had their baseline and follow up blood investigations done respectively.

Table 1 Results of Psoriasis Care Pattern Observed

	Yes		No	
Care Pattern	**N**	**%**	**N**	**%**
Psoriasis Education Programme	83	74.1	29	25.9
Psoriasis Severity Score				
Skin Examination (BSA / PASI)	101	90.2	11	9.8
Pain score (if arthropathy)	96	85.7	16	14.3
QoL Questionnaire (DLQI)	82	73.2	30	20.8
Metabolic Syndrome Risk Factors Screening				
DM Screening	50	44.6	62	55.4
Hyperlipidaemia Screening	46	41.1	66	58.9
Hypertension Screening	27	24.1	85	75.9
Obesity Screening	86	76.8	26	23.2
Laboratory Monitoring (If on systemic agents, N = 47)				
Baseline investigations	41	87.2	6	12.8
Follow up monitoring	22	46.8	25	53.2
Consent Prior to Initiation of Systemic Agents (N = 47)	4	8.5	43	91.5
Methotrexate (N = 28)	0	0	28	100
Acitretin (N =19)	4	21.1	15	78.9
Cyclosporin (N =0)	0	0	0	0

Table 2 Co-morbidities observed among the study cohort

	Pre-existing		Newly diagnosed	
Care Pattern	**N**	**%**	**N**	**%**
Diabetes Mellitus (DM)	18	16.1	8	16
Hypertension	25	22.3	6	22.2
Hyperlipidaemia	19	17	13	28.2
Ischaemic Heart Disease	9	8	ND	ND
Cerebrovascular Disease (CVD)	3	2.7	ND	ND
Obesity	2	3.6	47	57.3

Discussion

Early intervention, targeted treatment, treat-to target strategies and the use of treatment goals is a new management approach in medicine that have been increasingly employed in the management of chronic diseases, such as diabetes, hypertension and rheumatoid arthritis over the last decade[10]. As in other chronic diseases, well-defined treatment goals will be helpful in guiding physicians in their care of patients with psoriasis, thereby obviating poor outcomes and subsequently improve quality of psoriasis care[11].

Central to goal-oriented strategies are three principles: establish treatment goals, regularly evaluate treatment response and modify therapy in cases of insufficient response. Clinical audit on care of psoriasis is necessary to ensure the success of goal oriented strategies. With the above intentions in mind, we proceeded to do the above audit. Patient education is critical in promoting active participation of the patient towards his / her recovery. Active participation in the decision making process through a two-way exchange of information and strong physician-patient relationships is one potential solution to motivate adherence in psoriasis patients[12-13]. Patients with better knowledge of their condition and treatment application are more able to cope with their condition and also gain better therapeutic control. Patient education can be empowered by special education class, verbal communication during consultation and also with written take-home materials. Still about a quarter of our patients have yet to receive patient's education programme.

Topical therapies are effective in the treatment of mild to moderate disease. However patients with moderate to severe disease usually require phototherapy or systemic agents to achieve clearance[2-3]. In general, these more aggressive therapies have proven to be highly effective but they are not without side effects. As there is no standard therapeutic approach, the benefits and risks of the therapy must be weighed carefully for each patient and the impact of the systemic treatment should be monitored[2-4]. Proper monitoring of treatment progress and side effects remain the cornerstone for better treatment outcome. All patients on systemic therapies should have a baseline and also regular blood investigation monitoring during follow-up. Unfortunately from our audit, of those on systemic agents, only slightly more that three quarters patients and less than half of them, had their baseline and follow up blood investigations done respectively. Emphasis should be made for close blood monitoring of all the patients, especially who are on systemic therapy.

Despite advances in the management of psoriasis, the cumulative effect of the psychological, social and physical burden borne by patients with psoriasis is still considerable. Assessment of disease severity which complement measurement of disease extent and severity and impact on psychosocial functioning and quality of life should be used to assess the appropriateness of disease modifying drugs as well as response to treatment. The most widely used tool for assessing psoriasis severity is the PASI[14] and measures of disease severity and quality of life impairment is Dermatology Life Quality Index (DLQI)[15-16].

Body surface area (BSA) and PASI, for the grading of psoriasis symptoms (scaling, erythema and induration/infiltration) and extent of lesions are the most commonly use parameters in clinical trials. They are useful and reliable tools for assessing psoriasis severity in patients with moderate-to-severe disease[14]. In order to employ an independent measure of patient-reported psoriasis severity, assessment of HRQoL like DLQI was chosen as an appropriate indicator of HRQoL because of its widespread use, simplicity and reliable grading[15-16]. The Psoriasis severity score and DLQI were assessed regularly in our patients as part of the six monthly assessments for the National Psoriasis Registry.

The concept of psoriasis is now considered a systemic inflammatory disease. Recent studies have described the association of various burdening & life threatening comorbidities with psoriasis in particularly metabolic syndrome[5-9]. Metabolic syndrome has been demonstrated as a common precursor to the development of type II diabetes and cardiovascular disease as well as a risk factor for all causes mortality. Individuals with metabolic syndrome are associated with approximately 2 & 5-fold increased risk for CVD & type 2 DM respectively[17]. These pose a serious implication on our country's healthcare costs and services. Despite of our cohort of patients having a mean age of 48.8 years, only about half of them were screened for diabetes mellitus or hyperlipidaemia and only a quarter was screened for hypertension. We need to

do active screening for metabolic syndrome among our psoriasis patients. If they can be identified early, efforts can be undertaken to reduce their risk factors.

Conclusion

The care of psoriasis patients in Dermatology Clinic, Penang Hospital is not yet adequate. Doctors who treat psoriasis patients (especially more severely affected patients) need to approach the disease as a potentially multisystem disorder with regular screening and monitoring of the associated sequelae of the disease and also the complications of the treatment.

Remedial measures

Firstly, is to create awareness and to educate doctors and patients on psoriasis and its association with metabolic syndrome. This is done by having regular CME and psoriasis educational class. Next is to format protocol and schedule in a form of charts / tables, to facilitate monitoring and screening of patients. Patients will be given pamphlets on the general knowledge on psoriasis, treatments and the risk of co-morbidities.

Remedial measures may improve the awareness and knowledge of Psoriasis care. But it is the individual doctor's attitude and willingness to adopt the change that makes the difference.

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GENERAL DERMATOLOGY - Case Report

Syphilis - The great mimicker

Su-ming Wong[1], *MRCP*, Moonyza AAK[2], *MD*, Dawn A[3], *MRCP*, Roshidah B[3], *FRCP*

Keywords *sexually transmitted infection, plaques, Treponema*

Introduction

Syphilis is an ancient sexually transmitted infection, described since centuries ago, caused by the bacterium *Treponema pallidum*. Syphilis or luetic disease is known as the great imitator as it can have myriads of clinical presentations, often making it a diagnostic challenge to clinicians. We report a patient with secondary syphilis, who presented with scaly plaques on his trunk and face, sparing the palms and soles.

Case report

Mr A is a 37-year old lorry driver who presented with a 3-month history of pruritic, well demarcated crusted plaques which started on the lateral side of his left leg. Similar smaller discrete plaques were also noted on the left thigh, trunk, back and face. He was initially treated with antihistamines and topical steroids by a general practitioner without any improvement.

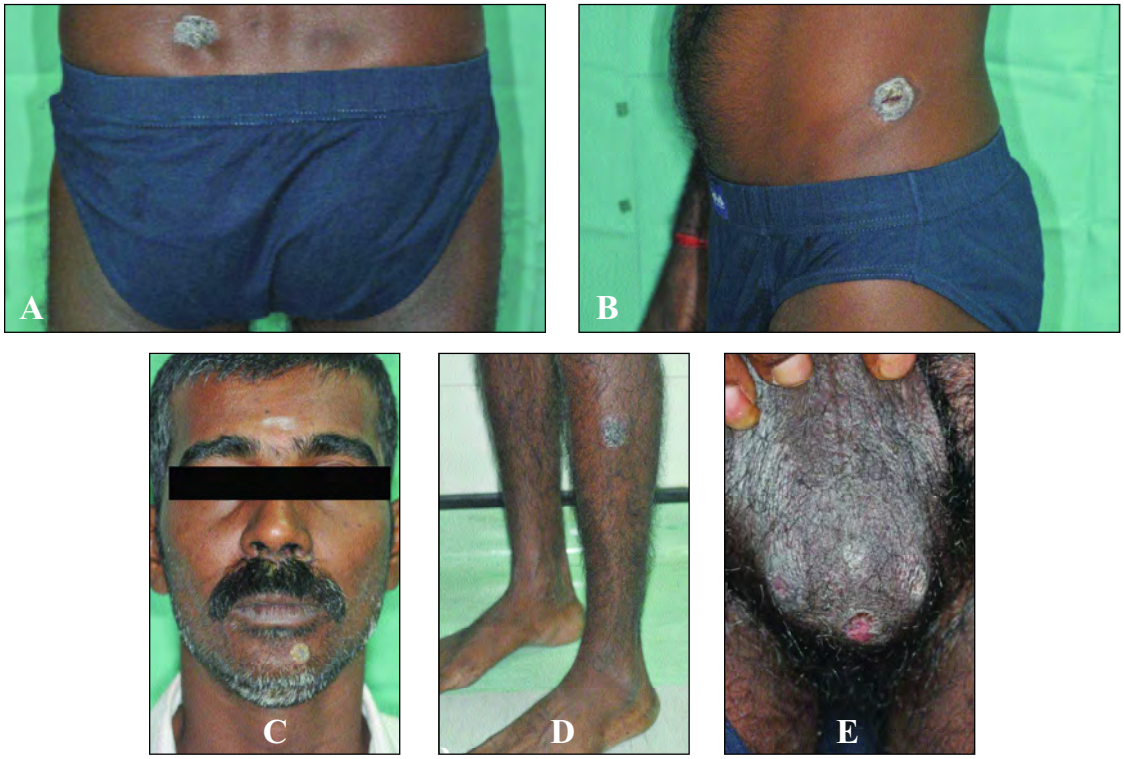

Figure 1 Well demarcated scaly plaques on the back (A), left trunk (B), face (C) and legs (D). Erosions and scaly plaques on the scrotum (E).

Correspondence
Wong Su-ming, *MRCP*
[1]Dermatology Unit, Department of Medicine,
University Malaya,
[2]Department of Medicine, Universiti Kebangsaan
Malaysia,
[3]Department of Dermatology, Hospital Kuala Lumpur
E-mail : smwong@um.edu.my

He is recently married, with no children. On further questioning, he admitted to having unprotected sex with multiple female partners, his most recent encounter being about a year ago. He denied intravenous drug abuse or having sex with men. He was otherwise well and had no other complaints.

On examination, there were multiple, well demarcated, discoid, hyperpigmented, scaly and thickened plaques scattered on the trunk, back, legs and face (Fig 1A-E). Lesions on the left chin and upper lip were slightly yellowish and crusted. There were also two small non-tender erosions and scattered scaly plaques on the scrotum (Fig 1F). His palms and soles were spared. There was no evidence of lymphadenopathy, hepatosplenomegaly, cardiac murmurs or neurological deficit.

Our provisional diagnosis was discoid eczema, with a differential of plaque psoriasis, hypertrophic lichen planus and secondary syphilis.

We proceeded with laboratory investigations and a skin biopsy. Serology tests for syphilis were strongly positive. His rapid plasma reagent (RPR) test was reactive at 1:128 dilution and confirmatory test with treponema pallidum haemagglutination test (TPHA) was detected. Screening for other sexually transmitted diseases including HIV, Hepatitis B, Hepatitis C, gonorrhea and Chlamydia trachomatis were negative. Skin biopsy showed typical histopathological features of syphilis including epidermal hyperplasia with parakeratosis and a dense band-like infiltrate in the upper dermis with numerous plasma cells (Fig 2). Collections of neutrophils were seen within the dermis and the epidermis especially at the stratum corneum.

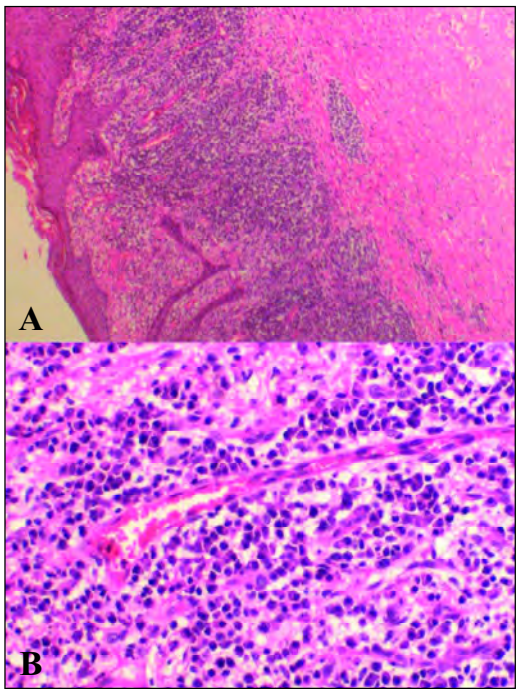

Figure 2 (A) There is a dense lichenoid infiltrate in the superficial dermis (x4 Haematoxylin-Eosin stain) and (B) the infiltrates are mainly lymphocytes with numerous plasma cells (x40 Haematoxylin-Eosin stain).

A diagnosis of secondary syphilis was confirmed and he was treated with weekly intramuscular injection of benzathine penicillin 2.4 mega units for two consecutive weeks. Upon review in the clinic two weeks later, no new skin lesions were seen and the previous lesions were resolving.

Discussion

Syphilis is an ancient sexually transmitted disease caused by the bacterium *Treponema pallidum*. It has been referred to as the 'great imitator' of skin diseases, with a myriad of clinical manifestations, variable in appearance and presentations. It occurs worldwide and the incidence varies according to the geographical location.

In Malaysia, syphilis is one of the notifiable diseases by law. The exact extent of the problem is unknown due to underreporting, underdiagnosis and asymptomatic manifestation of the disease. It was reported that from the 1990s to 2005, there has been a decline in the number of patients seen at our local genitourinary medicine clinic (31.2% to 24.1%). However, the World Health Organization (WHO) fact sheet on AIDS and sexually transmitted infections (2004) reported that the estimated prevalence of syphilis among female sex workers has been increasing, from 16.7 between 1997-1999, to 38.2 between 2000-2001. In addition, of late, we have noted an increasing trend in sexually transmitted infections (STIs) especially of syphilis in our clinic. This could be due to the increasing practice of men having sex with men (MSM) and an increase in awareness of this disease. In China, the national surveillance program showed a re-emergence of syphilis where a total of 74,000 cases of early syphilis were diagnosed in 2005 alone, despite the eradication of syphilis in the 1960s to the 1980s.

Syphilis can be divided into several stages - primary, secondary, early latent (<1 year), late latent (>1 year) and tertiary stages. The primary stage is defined by a chancre which is typically a painless, indurated erosion or ulcer at the site of inoculation, occurring after an incubation period of between 9 to 90 days. There have been reported cases of syphilis being spread by kissing, biting or touching a person who has active lesion on the lips, oral cavity, breast or genitals. These early lesions are highly infectious and transmission is seen in approximately one third of patients exposed to these lesions.

After an incubation period ranging from 6 weeks to 6 months, lesions of secondary syphilis may appear. Clinically, secondary syphilis is often diverse, and may be subtle; the cutaneous and mucosal lesions often mimicking other skin diseases. Typical manifestations of secondary syphilis include lymphadenopathy, condylomata lata, papulosquamous eruption with palm and sole involvement, moth-eaten alopecia and snail-track mouth ulcers. Other less common cutaneous manifestations which have been described include a macular eruption (syphilitic roseolas, leukomelanoderma), papular (including psoriasiform, lichenoid, nummular syphilids), pustular, and malignant syphilids which is a nodular-ulcerative variant, has a rapid progression and frequently involves the face.

In a series of 105 patients with secondary syphilis, the dominant cutaneous manifestation was maculopapular eruption (up to 2/3 of patients), while only one patient presented with a psoriasiform-type eruption. Our patient presented with pruritic psoriasiform plaques which were discrete, sparing the palm and soles, illustrating that the disease sometime presents atypically and may be missed if not thought of.

Treatment guidelines from the World Health Organization (WHO) recommend intramuscular benzathine penicillin 2.4 megaunits either as a single dose or weekly in two to three doses is the mainstay of treatment in developing countries. Despite its clinical use for the past several decades, no resistance has been reported so far. In patients allergic to penicillin, oral doxycycline 100 mg twice daily for 2 weeks, tetracycline 500 mg four times daily for 2 weeks or azithromycin 500 mg daily for 1 week may be given. However, there have been reports of azithromycin/macrolide resistant T. pallidum in the United States and Ireland.

Conclusion

It is of great importance to be familiar with the many, varied clinical manifestations of syphilis in order to institute early appropriate treatment for quick recovery of the patient as well as to halt the spread of this curable disease. Clinicians should have a high index of suspicion in high risk patients although the clinical presentations can be protean, varying from one individual to another. Reporting is also important so that the information can be used to accurately assess the extent of this disease and to formulate policies and procedures in Malaysia, as well as being an important means of sharing information with other healthcare professionals locally and worldwide.

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