Original Article

A Study on the Knowledge, Attitudes and Practices of Southeast Asian Dermatologists in the Management of Atopic Dermatitis

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Abstract

Introduction: This study evaluated the knowledge, attitudes and practices of Southeast Asian dermatologists in the management of atopic dermatitis (AD). Materials and Methods: A questionnaire survey of 255 dermatologists in Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam. Results: Familiarity with diagnostic criteria varied considerably. The usage of moisturisers by the respondents from Vietnam and Indonesia was significantly less frequent than the other countries. Most respondents (91% to 100%) used topical corticosteroids in children with mild-to-moderately severe dermatitis. Some respondents in the Philippines (17% to 19%) and Vietnam (11% to 25%) only used topical corticosteroids for severe disease. For infected eczema, most respondents would prescribe systemic antibiotics for mild-to-moderate infection. A minority in the Philippines (14%) and Vietnam (11%) did so only for severe infection. The top 4 systemic antibiotics prescribed most frequently were: erythromycin, cloxacillin, cephalosporin and amoxicillin/clavulanic acid. In Indonesia, a large proportion of the respondents (47%) prescribed amoxicillin most frequently. The majority of respondents (60% to 100%) prescribed both sedating and non-sedating oral antihistamines. Most respondents used oral corticosteroids to treat severe AD. Some in Malaysia, Singapore and Vietnam used cyclosporin (7% to 58%), azathioprine (5% to 31%) and methotrexate (5% to 14%). With the exception of those in Singapore, the majority of respondents (71% to 97%) did not use phototherapy. Conclusion: Familiarity with diagnostic criteria, the early and judicious use of moisturisers and topical corticosteroids, as well as the treatment of *Staphylococcus aureus* superinfection with penicillinase-stable antibiotics should be emphasised in this region.

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Key words: Atopic dermatitis, Management, Therapy

Introduction

Atopic dermatitis (AD) is a chronic and pruritic inflammatory skin disorder that occurs worldwide. Several guidelines on the management of AD have been published in the literature.[1-4] A recent study compared the therapeutic management of this disease in Japan, the USA and the UK.[5] However, there are no data on how AD is managed by dermatologists in the developing countries of Southeast (SE) Asia. This information would be useful in evaluating whether dermatologists in these countries follow therapeutic

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Table 1. Population, Racial Distribution and Prevalence of Atopic Dermatitis in Southeast Asian Countries Involved in Study

	Population (millions)*	Racial distribution	Prevalence of atopic dermatitis
Indonesia	209.3	Javanese (45%), Sundanese (14%), Madurese (8%), Malay (8%), Arab, Balinese, Chinese, Dayak, Papuan and Others (25%)	1.1% in 13- to 14-year-olds[6]
Malaysia	23.3	Malay, Iban, Dayak, Bidayuh (65.1%), Chinese (26.1%), Indian (7.7%) and Others (1.2%)	6.3% to 9.5% in 13- to 14-year-olds[6] 7.6 % in 14- to 16-year-olds[7]
Philippines	75.3	Filipino	5.3% in 13- to14-year-olds[6]
Singapore	4.0	Chinese (76.8%), Malay (13.9%), Indian (7.9%), Others (1.4%)	22.7% in 7-year-olds, 17.9% in 12-year-olds, 21.5% in 16-year-olds[8]
Thailand	61.0	Thai (85%), Chinese (12%), Thai-Malay (3%)	6.8% to 9.5% in 13- to 14-year-olds[6] 9.4% in 16- to 31-year-olds[9]
Vietnam	74.5	Vietnamese (90%), Tay, Thai, Chinese, Khmer, Others (10%)	3.3% in 5- to 11-year-olds[10]

guidelines. This knowledge would help in the formulation of medical education programmes for dermatologists and medical practitioners. Hence, we carried out a questionnaire survey to evaluate the knowledge, attitudes and practice of SE Asian dermatologists in the management of AD. The population, racial distribution and prevalence of AD in the 6 SE Asian countries involved in the study are summarised in Table 1.

Methods and Methods

A questionnaire survey of dermatologists belonging to the Dermatological Societies of Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam was carried out in November to December 2003. In each country, a standardised questionnaire (Appendix 1 and Table 2) was sent to dermatologists belonging to the respective Dermatological Society. In order to simplify the questionnaire and protect the confidentiality of the respondents, we decided not to include the demographic data of the respondents. In Thailand, due to logistic difficulties, the questionnaire forms were only sent to paediatric dermatologists. The questionnaire forms were then returned to the respective Dermatological Societies for data collation. Statistical analysis was performed using SPSS software (12.0). Descriptive statistics will be presented using percentages and 95% confidence intervals, where appropriate. Pairwise comparisons between 2 countries on each item of the questionnaire will be assessed using chi-square test or Fisher's exact test. Statistical significance was set at $P < 0.05$.

Results

The results of the survey were presented at the First Southeast Asian Atopic Dermatitis Round Table Meeting, held in Chiangmai, Thailand on 10 January 2004. The results are summarised in Table 3.

1. Epidemiology

A total of 255 dermatologists participated in the study. The response rate of the survey ranged from 34% to 100%. All the respondents in Indonesia were familiar with the UK Working Party's diagnostic criteria (Table 4).[11-13] Respondents in Malaysia, the Philippines, Singapore and the paediatric dermatologists surveyed in Thailand were more familiar with the diagnostic criteria of Hanifin and Rajka.[14] Less than half the respondents in the Philippines and Vietnam were familiar with either criteria.

The proportion of patients suffering from AD seen by the respondents varied considerably among the 6 countries. The following were the proportion seen by the majority of respondents: Indonesia (up to 20%), Malaysia (up to 30%), the Philippines (up to 50%), Singapore (11% to 30%), Thailand (11% to 30%) and Vietnam (up to 40%). The proportion of paediatric patients varied considerably among the respondents and there was no clear pattern.

2. Clinical Presentation

The majority of patients who presented to the respondents had mild-to-moderately severe AD. A small minority of respondents in Malaysia (14%) and Vietnam (9%) saw most of their patients presenting with severe AD. The proportion of patients presenting with severe disease in Malaysia was significantly higher than all the other countries except Thailand ($P < 0.05$).

3. Trigger Factors

The respondents thought that the following were the most common triggers or aggravating factors for AD in their country, in descending order of frequency: Indonesia (food, stress, upper respiratory tract infection), Malaysia (skin infection, stress, upper respiratory tract infection), the Philippines (stress, skin infection, upper respiratory

Table 2. Results of Questionnaire Survey

		Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Response rate		34% (68/200)	72% (44/61)	42% (42/100)	61% (36/59)	100% (10/10*)	34% (55/160)
Total number of practising dermatologists		557	65	600*	61	11†	500*
Question	Response						
1	a	100% (68)	57% (25)	5% (2)	39% (14)	30% (3)	27% (15)
	b	18% (12)	73% (32)	39% (17)	75% (27)	90% (9)	22% (12)
2	a	53% (36)	32% (14)	17% (7)	11% (4)	20% (2)	16% (9)
	b	26% (18)	36% (16)	24% (10)	37% (13)	40% (4)	29% (16)
	c	9% (6)	23% (10)	21% (9)	34% (12)	40% (4)	24% (13)
	d	3% (2)	2% (1)	17% (7)	9% (3)	0% (0)	20% (11)
	e	0% (0)	4% (2)	19% (8)	3% (1)	0% (0)	7% (4)
	f	9% (6)	2% (1)	2% (1)	6% (2)	0% (0)	4% (2)
3	a	15% (10)	14% (6)	5% (2)	17% (6)	0% (0)	38% (21)
	b	9% (6)	14% (6)	5% (2)	14% (5)	0% (0)	18% (10)
	c	26% (18)	9% (4)	19% (8)	22% (8)	0% (0)	22% (12)
	d	6% (4)	5% (2)	21% (9)	22% (8)	0% (0)	9% (5)
	e	12% (8)	9% (4)	14% (6)	14% (5)	0% (0)	11% (6)
	f	32% (22)	50% (22)	36% (15)	11% (4)	100% (10)	2% (1)
4	a	35% (24)	18% (8)	21% (9)	47% (17)	20% (2)	27% (15)
	b	65% (44)	68% (30)	76% (32)	53% (19)	80% (8)	64% (35)
	c	0% (0)	14% (6)	2% (1)	0% (0)	0% (0)	9% (5)
5	a	53% (36)	20% (9)	38% (16)	0% (0)	80% (8)	53% (29)
	b	47% (32)	57% (25)	60% (25)	75% (27)	30% (3)	18% (10)
	c	44% (30)	50% (22)	43% (18)	22% (8)	80% (8)	18% (10)
	d	29% (20)	89% (39)	48% (20)	56% (20)	90% (9)	62% (34)
	e	18% (12)	2% (1)	10% (4)	14% (5)	0% (0)	2% (1)
6	a	50% (34)	45% (20)	38% (16)	83% (30)	0% (0)	31% (17)
	b	26% (18)	48% (21)	43% (18)	17% (6)	80% (8)	38% (21)
	c	15% (10)	7% (3)	14% (6)	0% (0)	20% (2)	27% (15)
	d	9% (6)	0% (0)	5% (2)	0% (0)	0% (0)	4% (2)
7	a	24% (16)	0% (0)	43% (18)	0% (0)	0% (0)	47% (26)
	b	32% (22)	32% (14)	33% (14)	22% (8)	40% (4)	22% (12)
	c	38% (26)	50% (22)	21% (9)	56% (20)	40% (4)	29% (16)
	d	6% (4)	16% (7)	2% (1)	22% (8)	20% (2)	2% (1)
8	a	26% (18)	77% (34)	98% (41)	75% (27)	100% (10)	20% (11)
	b	53% (36)	20% (9)	2% (1)	14% (5)	0% (0)	44% (24)
	c	12% (8)	0% (0)	0% (0)	6% (2)	0% (0)	33% (18)
	d	9% (6)	2% (1)	0% (0)	6% (2)	0% (0)	4% (2)
9	a	50% (34)	86% (38)	100% (42)	94% (34)	100% (10)	18% (10)
	b	38% (26)	14% (6)	0% (0)	3% (1)	0% (0)	38% (21)
	c	3% (2)	0% (0)	0% (0)	3% (1)	0% (0)	38% (21)
	d	9% (6)	0% (0)	0% (0)	0% (0)	0% (0)	5% (3)

Table 2. Contd.

		Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Response rate		34% (68/200)	72% (44/61)	42% (42/100)	61% (36/59)	100% (10/10*)	34% (55/160)
Total number of practising dermatologists		557	65	600*	61	11†	500*
Question	Response						
10	a	50% (34)	64% (28)	71% (30)	78% (28)	40% (4)	64% (35)
	b	41% (28)	32% (14)	29% (12)	19% (7)	60% (6)	18% (10)
	c	6% (4)	2% (1)	0% (0)	3% (1)	0% (0)	18% (10)
	d	3% (2)	2% (1)	0% (0)	0% (0)	0% (0)	0% (0)
11	a	74% (50)	34% (15)	29% (12)	69% (25)	100% (10)	36% (20)
	b	26% (18)	57% (25)	52% (22)	22% (8)	0% (0)	36% (20)
	c	0% (0)	9% (4)	19% (8)	8% (3)	0% (0)	25% (14)
12	a	53% (36)	57% (25)	41% (17)	75% (27)	100% (10)	36% (20)
	b	47% (32)	39% (17)	43% (18)	19% (7)	0% (0)	53% (29)
	c	0% (0)	5% (2)	17% (7)	6% (2)	0% (0)	11% (6)
13	a	68% (46)	93% (41)	86% (36)	91% (32)	60% (6)	44% (24)
	b	32% (22)	7% (3)	6% (14)	9% (3)	40% (4)	53% (29)
	c	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	2% (1)
14	a	24% (16)	11% (5)	50% (21)	86% (31)	90% (9)	9% (5)
	b	61% (42)	43% (19)	43% (18)	14% (5)	10% (1)	58% (32)
	c	15% (10)	45% (20)	7% (3)	0% (0)	0% (0)	33% (18)
15	a	47% (32)	56% (24)	31% (13)	72% (26)	100% (10)	40% (22)
	b	50% (34)	39% (17)	55% (23)	28% (10)	0% (0)	49% (27)
	c	3% (2)	5% (2)	14% (6)	0% (0)	0% (0)	11% (6)
16	a	0% (0)	5% (2)	7% (3)	33% (12)	0% (0)	5% (3)
	b	65% (44)	30% (13)	83% (35)	44% (16)	70% (7)	13% (7)
	c	68% (46)	77% (34)	55% (23)	44% (16)	80% (8)	51% (28)
	d	0% (0)	2% (1)	2% (1)	0% (0)	0% (0)	9% (5)
	e	38% (26)	57% (25)	40% (17)	42% (15)	0% (0)	51% (28)
	f	3% (2)	2% (1)	0% (0)	3% (1)	0% (0)	5% (3)
17	a	47% (32)	11% (5)	24% (10)	6% (2)	0% (0)	13% (7)
	b	18% (12)	48% (21)	76% (32)	47% (17)	90% (9)	4% (2)
	c	18% (12)	23% (10)	29% (12)	22% (8)	10% (1)	16% (9)
	d	62% (42)	78% (35)	41% (17)	31% (11)	80% (8)	49% (27)
	e	15% (10)	23% (10)	31% (13)	56% (20)	30% (3)	53% (29)
	f	3% (2)	2% (1)	2% (1)	6% (2)	20% (2)	11% (6)
	g	9% (6)	0% (0)	0% (0)	0% (0)	0% (0)	4% (2)
18	a	53% (36)	80% (35)	74% (31)	58% (21)	100% (10)	71% (39)
	b	41% (28)	18% (8)	24% (10)	42% (15)	0% (0)	15% (8)
	c	6% (4)	2% (1)	2% (1)	0% (0)	0% (0)	13% (7)
	d	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
19	a	6% (4)	14% (6)	5% (2)	17% (6)	0% (0)	7% (4)
	b	21% (14)	0% (0)	21% (9)	3% (1)	0% (0)	31% (17)
	c	73% (50)	86% (38)	74% (31)	81% (29)	100% (10)	60% (33)
	d	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)

Table 2. Contd.

		Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Response rate		34% (68/200)	72% (44/61)	42% (42/100)	61% (36/59)	100% (10/10*)	34% (55/160)
Total number of practising dermatologists		557	65	600*	61	11†	500*
Question	Response						
20	a	100% (68)	93% (41)	86% (36)	97% (35)	90% (9)	67% (37)
	b	0% (0)	27% (12)	2% (1)	58% (21)	0% (0)	7% (4)
	c	0% (0)	27% (12)	0% (0)	31% (11)	0% (0)	5% (3)
	d	3% (2)	11% (5)	2% (1)	14% (5)	0% (0)	5% (3)
	e	0% (0)	0% (0)	2% (1)	3% (1)	0% (0)	0% (0)
	f	0% (0)	5% (2)	7% (3)	0% (0)	10% (1)	9% (5)
21	a	0% (0)	0% (0)	2% (1)	3% (1)	0% (0)	4% (2)
	b	42% (28)	43% (19)	24% (10)	42% (15)	0% (0)	38% (21)
	c	26% (18)	30% (13)	45% (19)	33% (12)	30% (3)	29% (16)
	d	32% (22)	27% (12)	29% (12)	22% (8)	70% (7)	29% (16)
22	a	3% (2)	25% (11)	29% (12)	72% (26)	10% (1)	13% (7)
	b	97% (66)	75% (33)	71% (30)	28% (10)	90% (9)	85% (47)
23	a	0% (0)	5% (2)	0% (0)	8% (3)	0% (0)	27% (15)
	b	100% (68)	95% (42)	100% (42)	92% (33)	100% (10)	71% (39)

* These numbers are estimations as no official figures are available
† These numbers refers to paediatric dermatologists only

Table 3. Familiarity with Diagnostic Criteria

Country	UK Working Party % (95% CI)	Hanifin and Rajka % (95% CI)
Indonesia	100 (95-100)	18 (9-29)
Malaysia	57 (41-72)	73 (57-85)
Philippines	5 (0.6-16)	39 (26-57)
Singapore	39 (23-56)	75 (58-88)
Thailand	30 (7-65)	90 (55-99)
Vietnam	27 (16-41)	22 (12-35)

Table 4. UK Working Party's Diagnostic Criteria for Atopic Dermatitis

An itchy skin condition (or parental report of scratching or rubbing in a child)

Plus 3 or more of the following

1. Onset below age 2 years (not used if child is under 4 years)
2. History of skin crease involvement (including cheeks in children under 10 years)
3. History of generally dry skin
4. Personal history of other atopic disease (or history of any atopic disease in a first degree relative in children under 4 years)
5. Visible flexural dermatitis (or dermatitis of cheeks/forehead and outer limbs in children under 4 years)

tract infection, food), Singapore (stress, skin infection), Thailand (skin infection, food, upper respiratory tract infection in children) and Vietnam (skin infection, food).

Most of the respondents felt that less than 25% of their AD patients had food allergy as a triggering factor. Some respondents in Indonesia (24%), the Philippines (19%), Thailand (20%) and Vietnam (31%) thought that food allergy was a triggering factor in more than 25% of their patients with AD.

Most respondents in Indonesia, Malaysia, Singapore and Thailand seldom or infrequently investigated for food allergy or aeroallergen hypersensitivity in their management of AD. However, a large proportion of respondents in the Philippines (43%) and Vietnam (47%) always carried out such investigations.

4. Management

Almost all the respondents in the Philippines (98%) and all the paediatric dermatologists in Thailand always used moisturisers for the clearance phase of treatment. Most of the respondents in Indonesia (79%), Malaysia (97%) and Singapore (89%) sometimes or always used moisturisers for the clearance phase of treatment. Most of the respondents in Vietnam (77%) infrequently or sometimes did so.

The vast majority of respondents in Malaysia (86%), the Philippines (100%), Singapore (94%) and Thailand (100%) always used moisturisers for the maintenance phase of treatment. Most of the respondents in Indonesia (88%) always or sometimes did so, and most of the respondents in Vietnam (76%) sometimes or infrequently did this. The usage of moisturisers in both the clearance and maintenance

phase of treatment by the dermatologists in Vietnam and Indonesia was significantly less frequent when compared to all the other countries (P <0.05).

The large majority of respondents (82% to 100%) always or sometimes recommended the use of soap-less cleansers.

The large majority of respondents in the 6 countries (91% to 100%) used topical corticosteroids in infants and children with AD when it was mild-to-moderately severe. However, some respondents in the Philippines (17% to 19%) and Vietnam (11% to 25%) only used topical corticosteroids in infants and children with AD when it was severe. Almost all the respondents in the 6 countries (98% to 100%) most frequently used mild-to-moderately potent topical corticosteroids in infants and children.

Most of the respondents in Indonesia (76%), Malaysia (88%) and Vietnam (91%) have not used the topical calcineurin inhibitors. These medications were not available to a large proportion of the respondents in Malaysia (45%) and Vietnam (33%). The large majority of the respondents in Singapore (86%) and Thailand (90%) had used them.

For infected eczema, most respondents would prescribe systemic antibiotics when the patient had mild-to-moderate infection. However, a small proportion of respondents in the Philippines (14%) and Vietnam (11%) did so only when the infection was severe. The respondents from Thailand and Singapore were more aggressive, with a significantly larger proportion prescribing systemic antibiotics for mild infection (P <0.05). The top 3 topical antibiotics that were prescribed most frequently by respondents were, in descending order of frequency: fusidic acid, mupirocin and corticosteroid/antibiotic combination. Topical tetracycline and mupirocin were prescribed significantly more frequently by respondents from Singapore and the Philippines, respectively (P <0.05). The top 4 systemic antibiotics that were prescribed most frequently by respondents were, in descending order of frequency: erythromycin, cloxacillin, cephalosporin and amoxicillin/clavulanic acid combination. In Indonesia, a large proportion of the respondents (47%) prescribed amoxicillin most frequently; this proportion was significantly greater than all the other countries (P <0.05).

Most respondents (86% to 100%) always or sometimes prescribed oral antihistamines for their patients with AD. The majority of respondents (60% to 100%) prescribed both sedating and non-sedating oral antihistamines. Some respondents from Indonesia (21%), the Philippines (21%) and Vietnam (31%) only prescribed non-sedating antihistamines. A minority in Malaysia (14%) and Singapore (17%) only prescribed sedating antihistamines.

Most respondents used oral corticosteroids to treat severe AD: Indonesia (100%), Malaysia (93%), the Philippines (86%), Singapore (97%), Thailand (90%) and Vietnam (67%). Some respondents in Malaysia, Singapore and Vietnam used, in descending order of frequency, cyclosporin (7% to 58%), azathioprine (5% to 31%) and methotrexate (5% to 14%). Among the 6 countries, a significantly larger proportion of dermatologists in Singapore had used cyclosporin (P <0.05).

With the exception of the paediatric dermatologists in Thailand, the majority of respondents (68% to 78%) had used wet wrap therapy in the management of AD, with most of them doing so sometimes or infrequently. Some respondents (22% to 70%) had never used this therapy.

A significantly larger proportion of dermatologists in Singapore had used phototherapy when compared to all the other countries (P <0.001). With the exception of Singapore, the majority of respondents (71% to 97%) did not use phototherapy for the management of AD.

All the respondents in Indonesia, the Philippines and Thailand, as well as the majority of the respondents in the other countries, did not recommend the use of alternative medicines such as traditional Chinese medicines and homeopathy. However, when compared to all the other countries, a significantly larger proportion of respondents from Vietnam (27%) had recommended the use of alternative medicines (P <0.05).

Discussion

The questionnaire forms were sent to most of the practising dermatologists in Malaysia and Singapore and the response rates were 72% and 61%, respectively. Hence, the findings in these 2 countries were more representative of the knowledge, attitudes and practices of the dermatologists there. The findings of the survey in Thailand would represent the opinion of the paediatric dermatologists there but may not be representative of the other 390 dermatologists in the country. The lower response rates in the other countries and the lower proportion of practising dermatologists who were sent the questionnaire forms meant that the findings of the survey may not reflect the management trends in these other countries.

We feel that the established diagnostic criteria for AD should be used by dermatologists in daily clinical practice.[11-14] In particular, the UK Working Party's diagnostic criteria is user-friendly and has been validated for use in both the clinical setting and for epidemiological studies (Table 4). Diagnostic criteria become particularly important when different populations are compared in epidemiological studies and clinical trials. Familiarity with 2 commonly used diagnostic criteria varies considerably among dermatologists of the 6 different countries and this fact must be taken into consideration when studies on AD are done in SE Asia.

Patients with AD accounted for a large proportion of the

patients seen by the majority of the dermatologists. The majority of patients who presented to the respondents had mild-to-moderately severe AD. This has several possible implications: a) patients may have had good access to medical care and presented early; b) primary care physicians may not have been comfortable with the management of AD and were referring even mild cases to the dermatologists; c) patients may have preferred to be under the care of dermatologists.

A quarter of the dermatologists in Indonesia and a fifth of the paediatric dermatologists in Thailand thought that more than 25% of their patients with AD had food allergy as a triggering factor. However, they seldom or infrequently investigated for food allergy or aeroallergen hypersensitivity in their management. This could be due to the difficulty of establishing causality as positive skin prick and specific IgE tests are not always clinically relevant.

Moisturisers are steroid-sparing and useful for both prevention and maintenance therapy. They have been shown to improve the skin barrier function and decrease the severity of symptoms.[15-17] The use of non-soap cleansers and traditional soap substitutes, like emulsifying ointment, and mild moisturising soaps is widely advocated by dermatologists. The application of topical steroids and moisturisers immediately after the bath is important in the management of AD.[18]

Topical corticosteroids remain the mainstay of therapy for AD. It is the opinion of the workgroup that topical corticosteroids should be initiated early in the treatment of infants and children with AD, when the disease is mild-to-moderately severe. In a recent study, the proportion of dermatologists who used topical corticosteroids in infants and children with mild and moderately severe AD was as follows: USA (96% to 99%), UK (99% to 100%) and Japan (85% to 96%).[5] Some dermatologists in Japan (4% to 14%) only used topical corticosteroids in infants and children with AD when the condition was severe. A similar pattern of topical corticosteroid utilisation was noted in the Philippines and Vietnam, where up to 19% and 25%, respectively, of respondents only used topical corticosteroids in infants and children with AD when the condition was severe. We do not know how these groups of dermatologists treat mild-to-moderately severe disease; this would be an interesting question to address in future studies.

The topical calcineurin inhibitors, tacrolimus and pimecrolimus, have been shown to reduce the severity of AD in adults and children. They have a good short-term safety record. The lack of corticosteroid-associated side effects like striae, atrophy and pituitary-adrenal suppression is a significant therapeutic advantage. However, they are currently not widely available in SE Asia and, when available, may not be affordable for underprivileged patients.

In a prospective study of *Staphylococcus aureus* skin colonisation in AD patients seen at a tertiary dermatology referral centre in Singapore, *S. aureus* was isolated in 53% of patients with mild dermatitis, and in 100% with moderate-to-severe dermatitits.[19] All *S. aureus* isolates were sensitive to cloxacillin, cephalexin, clindamycin and cotrimoxazole; 92% were sensitive to erythromycin, but only 13% were sensitive to ampicillin and penicillin. It is the opinion of the workgroup that systemic antibiotics should be prescribed once bacterial skin infection is suspected clinically. Cloxacillin, first-generation cephalosporins (e.g., cephalexin) and erythromycin, for patients allergic to penicillin, are the drugs of choice. A penicillinase-unstable penicillin like amoxicillin is unlikely to be efficacious. Topical antibiotics may be effective for localised infection but development of resistance is a great concern. It is also not practical to apply topical antibiotics to large areas of the body.

There is little evidence that antihistamines are effective in relieving the itch associated with AD.[20] However, AD patients with concurrent allergic rhinoconjunctivitis may benefit from the use of antihistamines and the sedating ones may help to promote restful sleep. A recent study suggested that fexofenadine, a non-sedating antihistamine, has a small but statistically significant benefit in the relief of pruritus associated with AD.[21]

Systemic immunomodulatory agents are used in the treatment of refractory AD that is not well controlled with optimal topical therapy. The dermatologists in SE Asia are most familiar with the use of oral corticosteroids. Other drugs like cyclosporin, azathioprine and methotrexate are sometimes used in Malaysia, Singapore and Vietnam, presumably as steroid-sparing agents or when patients fail to respond to oral corticosteroids. In a recent study, systemic corticosteroid usage in the USA, the UK and Japan were 84%, 84% and 49%, respectively.[5] Compared to these 3 countries, the usage of systemic corticosteroids for severe AD among SE Asian dermatologists appear to be higher, with the exception of Vietnam.

Wet wraps, either in the form of damp gauze bandages or using the "double-pyjamas" method (with a damp inner layer and a dry outer layer), have been very useful in the treatment of moderate-to-severe AD. However, the humid climate in SE Asia and the belief of dampness-induced rheumatism in some cultures make this an unpopular form of therapy. It is usually used as an adjunctive therapy in hospitalised or highly motivated patients.

We have found phototherapy with narrowband UV-B or broadband UV-A and UV-B combination to be a useful adjunctive therapy in reducing the severity of AD. However, with the exception of Singapore, access to phototherapy

units in the other SE Asian countries is largely limited to the cities.

There is conflicting evidence regarding the efficacy and concerns about the safety of traditional Chinese medication for AD. Currently, there is no evidence in the literature to support the use of homeopathy in the treatment of AD. Therefore, it is not surprising that most dermatologists in SE Asia do not recommend the use of these alternative therapies. The proportion of respondents from Vietnam (27%) and Singapore (8%) who recommended alternative therapies are comparable to their counterparts from Japan (27%), the UK (14%) and the USA (9%).[5]

Conclusion

SE Asia is composed of countries with different healthcare systems and significant socioeconomic and cultural diversity. The management of AD by dermatologists in this region varies considerably in certain aspects and often, this is a result of differing access to medical care, socioeconomic circumstances and cultural beliefs of the people. An understanding of the knowledge, attitudes and practices of SE Asian dermatologists in the management of AD and the environment in which they practise would greatly aid us in the formulation of medical education programmes. In particular, familiarity with at least one diagnostic criteria, the use of moisturisers in both the clearance and maintenance phases of treatment, the early and judicious use of topical corticosteroids, as well as the treatment of *S. aureus* superinfection with penicillinase-stable antibiotics are aspects of management that should be emphasised. This would, we hope, result in better care of AD for the people in this region.

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Appendix 1. Questionnaire Form

1. Are you familiar with the following diagnostic criteria for atopic dermatitis? (you may circle more than 1)
   a. UK Working Party's diagnostic criteria of Williams HC et al
   b. Diagnostic criteria of Hanifin and Rajka

2. What percentage of your patients suffers from atopic dermatitis (AD)?
   a. <11%
   b. 11-20%
   c. 21-30%
   d. 31-40%
   e. 41-50%
   f. >50%

3. What percentage of your patients with AD are children (<14 years old)?
   a. <11%
   b. 11-20%
   c. 21-30%
   d. 31-40%
   e. 41-50%
   f. >50%

4. For the majority of your AD patients, how severe is their disease at first presentation?
   a. Mild
   b. Moderate
   c. Severe

5. What usually triggers/aggravates your patients' condition? (you may circle more than 1)
   a. Food allergy
   b. Stress
   c. Upper respiratory tract infection
   d. Skin infection
   e. None of the above

6. What proportion of your AD patients have food allergy as a trigger of their condition?
   a. <10%
   b. 10-24%
   c. 25-50%
   d. >50%

7. How often do you investigate for food allergy or aeroallergen hypersensitivity in the management of AD?
   a. Always
   b. Sometimes
   c. Infrequent
   d. Never

8. How often do you use moisturisers for the clearance phase of treatment?
   a. Always
   b. Sometimes
   c. Infrequent
   d. Never

9. How often do you use moisturisers for maintenance phase of treatment?
   a. Always
   b. Sometimes
   c. Infrequent
   d. Never

10. How often do you recommend the use of soap-less cleansers?
    1. Always
    2. Sometimes
    3. Infrequent
    4. Never

11. When do you use topical corticosteroids in infants with AD?
    a. Mild disease
    b. Moderate disease
    c. Severe disease

12. When do you use topical corticosteroids in children (<16 years old) with AD?
    a. Mild disease
    b. Moderate disease
    c. Severe disease

13. What potency of topical corticosteroid do you use most frequently in infants and children?
    a. Low potency
    b. Mild potency
    c. High potency

14. Have you used the topical calcineurin inhibitors (pimecrolimus and tacrolimus)?
    a. Yes
    b. No
    c. Not available

15. For infected eczema, when do you prescribe systemic antibiotics?
    a. Mild infection
    b. Moderate infection
    c. Severe infection

16. Which of the following topical antibiotics do you prescribe most frequently for AD patients? (you may circle more than 1)
    a. Tetracycline
    b. Mupirocin
    c. Fusidic acid
    d. Polymycin, Bacitracin and Neomycin combination
    e. Combination of corticosteroid and antibiotic
    f. Others, please specify: _____

17. Which of the following systemic antibiotics do you prescribe most frequently for AD patients? (you may circle more than 1)
    a. Amoxicillin
    b. Cloxacillin
    c. Amoxicillin/clavulanic acid
    d. Erythromycin
    e. Cephalosporins
    f. Cotrimoxazole
    g. Others, please specify: _____

18. How often do you prescribe oral antihistamines for your patients with AD?
    a. Always
    b. Sometimes
    c. Infrequent
    d. Never

19. Types of oral antihistamines prescribed
    a. Sedating type only
    b. Non-sedating only
    c. Both sedating and non-sedating
    d. Not applicable (if your answer to Q 18 is d)

Appendix 1. Contd.

20. Which of the following do you use in severe AD? (you may circle more than 1)
    a. Oral steroids
    b. Cyclosporine
    c. Azathioprine
    d. Methotrexate
    e. Mycophenolate mofetil
    f. Others, please specify: _____

21. How often do you use wet wraps therapy in the management of AD?
    a. Always
    b. Sometimes
    c. Infrequent
    d. Never

22. Do you use phototherapy for your AD patients?
    a. Yes
    b. No

23. Do you recommend the use of alternative medicines such as traditional Chinese medicines and homeopathy?
    a. Yes
    b. No