

Personal Research and Experience on treatment of Eczema

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Abstract

Traditionally, the effectiveness of Chinese Medicine is tried by screening directly on human. Different conditions for acute effect on treatment of eczema were tried.

Beef, egg, chicken, asparagus, stir-fried shrimp, crab and eel had proliferation acute effect on eczema. High temperature, high humidity and polluted air environment had proliferation acute effect on eczema. Honey, watermelon, Johnson and Dove moisture cream had proliferation acute effect on eczema. Being excited on playing fighting video games had proliferation acute effect on eczema. Sweating on doing housework had proliferation acute effect on eczema. Sleeping, playing tai-chi, watching television and movie had inhibitory effect on eczema. Applying water extract of claw of the garment of plain silk gauze, triamcinolone acetone and econazole nitrate cream, oleanolic acid (OA) cream on the skin had inhibitory effect on eczema.

In addition, 1,7-dihydroxy-3,8-dimethoxyxanthone, 1,7,8-trihydroxy-3-methoxyxanthone, 1-hydroxy-3,7,8-trimethoxyxanthone and 1,8-dihydroxy-2,6-dimethoxyxanthone have MAICs on chronic eczema were determined to be 3.13 mg/mL. OA had MAIC of 25 mg/mL on chronic eczema. Luteolin-7-O-glucoside had MAIC of 12.5 mg/mL on chronic eczema.

Keywords: Acute effect, chronic eczema, clinical, personal, experience,

Introduction

Eczema is a form of dermatitis, or inflammation of the upper layers of the skin. The term “eczema” is broadly applied to a range of persistent or recurring skin rashes characterized by redness, skin edema, itching and dryness, with possible crusting, flaking, blistering, cracking, oozing, or bleeding. Areas of temporary skin discoloration sometimes characterize healed lesions, though scarring is rare. It can be broadly divided into three types.

Acute eczema

It refers to a rapidly evolving red rash which may be blistered and swollen (Figure 1).

Chronic eczema

It refers to a longstanding irritable area. It is often darker than the surrounding skin, thickened (lichenified) and much scratched (Figure 2).

Sub-acute eczema

States between acute and chronic eczema (Figure 3).

Background

Unknown inflammatory of the skin appears due to insect bite in 1/6/2006.

Ointment treatment was carried out but not effective. (1/6/2006-1/7/2006)

Folk medicine of Chinese medicinal formulae was used but not effective. (1/7/2006-14/7/2006)

Antibiotic treatment was carried out but not effective. (19/7/2006-31/7/2006)

Eczema was gotten and identified by Wong R. G. in Xiamen Province Chinese Hospital in 1/8/2006 and Zhang Y. Z. in Xiamen First Hospital in 9/9/2006 (Appendix IV).

Treatment using Chinese medicinal formulae by oral, bathing together with triamcinolone acetone and econazole nitrate cream was used for treatment 1/8/2006-9/9/2006. Acute eczema was controlled but not for chronic and sub-acute eczema. From 9/9/2006-5/1/2007, other treatments were

carried out such as other medicinal formulae, ointment, western medicinal pills given by other doctors were used. But these therapies only control the disease but not for recovery, even the treatments were effective, the crisis of relapse leaded to the reappearance of eczema.

Experiment

Determination of effect of factors on eczema

Since 6/1/2007, experiment was carried out to test how the factors in everyday life have acute effect on eczema. They were tested at 12:00 noon everyday and the results were tabulated (Table 1). Any comfortable or uncomfortable feelings are recorded at 7:00 pm. Uncomfortable feeling means feeling of itch and/or the growth of red swollen scar with hot skin. Comfortable feeling means the suppression of red swollen scar and/or release of itch feeling with normal skin temperature. From 7:00 pm to the noon of next day, a balanced diet and things were done as usual. If uncomfortable feelings occurred, triamcinolone acetonide and econazole nitrate cream was applied for the "recovery". It is because clinical studies were shown that triamcinolone acetonide and econazole nitrate cream¹ has inhibitory effect on treatment of eczema. Body was kept in air-conditioned environment (15 – 25 °C) unless otherwise specified. For eating and drinking, rice porridge was eaten only at lunch did not have any significant acute effect on the eczema. So this was acted as a control for the experiment. Eating rice porridge plus one of the other food or Chinese herbal medicine (CHM) could be used to test which food or CHM had beneficial effect or inhibitory effect on eczema. As a result, beef, egg, chicken, asparagus, stir-fried shrimp, crab and eel had proliferation acute effect on eczema. None of the tested food or CHM had strong inhibitory acute effect on eczema. Foods or CHM having no significant acute effect on eczema were used as controls for testing the factors of environment, smearing and physical action. The results were tabulated (Table 2).

As a result, high temperature, high humidity and polluted air environment had proliferation acute effect on eczema.

Honey, watermelon, Johnson and Dove moisture cream had proliferation acute effect on eczema. Being excited on playing fighting video games had proliferation acute effect on eczema. Sweating on doing housework had proliferation acute effect on eczema. Sleeping, playing tai-chi, watching television and movie had inhibitory effect on eczema. Applying water extract of claw of the garment of plain silk gauze, triamcinolone acetonide and econazole nitrate cream, OA mixed with cosmetic emulsifier (Acrylamide/Sodium Acrylate/copolymer/Mineral oil) on the skin had inhibitory effect on eczema.

Determination of minimum acute inhibitory concentration (MAIC) of compounds isolated from Gentianopsis paludosa (GP).

As OA mixed with cosmetic emulsifier had acute inhibitory effect on eczema, MAIC is worth to be found. Compounds isolated from GP were tested.

Apparatus

Test-tubes, 10 mL; Measuring cylinder, 10 mL;
Electronic balance; Glass rod.

Reagents

Emulsifier (Acrylamide/Sodium Acrylate/copolymer/Mineral oil)

Experimental procedures

Zero-point-one g of compounds was weighed in a test-tube. Four mL of emulsifier (Acrylamide/Sodium Acrylate/copolymer/Mineral oil) was mixed with the compounds. Two-fold serial dilutions were carried out. Each concentration of compounds was applied to chronic eczema at 2:00 pm and feelings were recorded at 7:00 pm everyday. The concentration of compounds used, and feelings of comfortability on chronic eczema were recorded and tabulated (Table 3). MAIC was defined as the concentration of compounds just had comfortable feelings applied to chronic eczema.

Results

Beef, egg, chicken, asparagus, stir-fried shrimp, crab and eel had proliferation acute effect on eczema. High temperature, high humidity and polluted air environment had

proliferation acute effect on eczema. Honey, watermelon, Johnson and Dove moisture cream had proliferation acute effect on eczema. Being excited on playing fighting video games had proliferation acute effect on eczema. Sweating on doing housework had proliferation acute effect on eczema. Sleeping, playing tai-chi, watching television and movie had inhibitory effect on eczema. Applying water extract of claw of the garment of plain silk gauze, triamcinolone acetonide and econazole nitrate cream, oleanolic acid (OA) cream on the skin had inhibitory effect on eczema.

In addition, 1,7-dihydroxy-3,8-dimethoxyxanthone, 1,7,8-trihydroxy-3-methoxyxanthone, 1-hydroxy-3,7,8-trimethoxyxanthone and 1,8-dihydroxy-2,6-dimethoxyxanthone have MAICs on chronic eczema were determined to be 3.13 mg/mL. OA had MAIC of 25 mg/mL on chronic eczema. Luteolin-7-O-glucoside had MAIC of 12.5 mg/mL on chronic eczema.

Discussion - Drug development for treatment of Eczema

Eczema is an allergic condition that affects the skin. It can be triggered by just about anything coming in contact with the skin. It occurs in atopic people, who are extra sensitive to skin irritation. Dry, flaky skin appears over red, inflamed areas, causing intense itching and burning. Eczema is a very common condition and it affects all races and ages, including young infants. About 1-2 % of adults have eczema, and as many as 20 % of children are affected. It usually begins early in life, even before asthma or hay fever. Most affected individuals have their first episode before age 5 years. For some, the disease will improve with time. For others, however, eczema is a chronic or recurrent disorder. Although it can occur just once, it usually occurs on and off throughout life, or lasts the entire lifetime. Eczema can be a difficult, frustrating condition. The natural human desire to scratch or

rub an itchy rash just makes the condition worse and treatments can be slow and are not always completely effective. The exact cause of eczema is not known. Although it is activated by the immune system and is related to allergic reactions, it is not the same as other allergic reactions. People with eczema do have the immunoglobulin E (IgE) antibodies produced by the immune system as part of allergic reactions²⁻³.

Mechanism of the cause of eczema is not known but from the Traditional Chinese Medicine (TCM) point of view, it is related to "hot" and "dampness". Compounds isolated from GP had acute inhibitory effect on eczema. It may be due to its immunomodulatory and anti-inflammatory properties. Finding its biological mechanisms on treating eczema can help synthesize target compounds for treatment of eczema.

References

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Figures



Figure 1 Photo of acute eczema.



Figure 2 Photo of chronic eczema



Figure 3 Photo of sub-acute eczema.

Tables

Table 1. Effect of different factors on eczema related to eating and drinking

Factors	Date of testing		
	Uncomfortable feeling	No significant change in feeling	Comfortable feeling
Eating and drinking			
Rice porridge only		6/1/2007	
		7/1/2007	
		8/1/2007	
Rice porridge + pork		9/1/2007	
		10/1/2007	
		11/1/2007	
Rice porridge + beef	28/1/2007		
	9/2/2007		
	27/2/2007		
Rice porridge + egg	29/1/2007	26/2/2007	
	4/3/2007		
Rice porridge + chicken	12/1/2007		
	30/1/2007		
	5/2/2007		
Rice porridge + carrots		18/1/2007	
		27/1/2007	
		13/3/2007	
Rice porridge + mushrooms		13/1/2007	
		31/1/2007	
		6/2/2007	
Rice with green bean porridge		2/2/2007	
		5/2/2007	

		15/3/2007
Rice porridge + spinach		3/2/2007
		8/2/2007
		29/3/2007
Rice porridge + soybean curd	4/2/2007	14/1/2007
		7/2/2007
Rice porridge + asparagus	10/2/2007	
	14/2/2007	
	18/3/2007	
Rice with <i>rhizome smilacis</i>		15/1/2007
<i>glabrae</i> porridge		12/2/2007
		14/3/2007
Rice with <i>semen phaseoli</i>		16/1/2007
porridge		11/2/2007
		10/3/2007
Rice with <i>semen coicis</i>		17/1/2007
porridge		13/2/2007
		15/2/2007
Rice with <i>semen nelumbinis</i>		26/1/2007
porridge		16/2/2007
		24/2/2007
Rice with <i>ginseng</i> porridge		19/1/2007
		17/2/2007
		25/2/2007
Rice porridge + steamed shark		26/2/2007
fish		1/3/2007
		2/3/2007
Rice porridge +	21/2/2007	25/1/2007
Fried Salmon		9/3/2007
Rice porridge + stir-fried	20/1/2007	
shrimp	18/2/2007	
	3/3/2007	
Rice with crab porridge	22/2/2007	
	8/3/2007	
	11/3/2007	
Rice with abalone porridge		21/1/2007
		19/2/2007
		12/3/2007

Rice with tench porridge	20/2/2007	22/1/2007
		7/3/2007
Rice porridge + eel	24/1/2007	
	6/3/2007	
	12/3/2007	
Rice with <i>bulbus lili</i> porridge		23/1/2007
		23/2/2007
		5/3/2007

Table 2 Effect of different environmental factors, factors smearing on skin and actions on eczema.

Factors	Date of testing		
	Uncomfortable feeling	No significant change in feeling	Comfortable feeling
Environment			
Stay at air-conditioned environment (15 – 25 °C)		11/6/2007	
		13/6/2007	
		16/6/2007	
Stay at temperature > 30 °C without air-condition	7/5/2007		
	18/5/2007		
	29/5/2007		
Stay at humidity > 85 % without air-condition	24/4/2007		
	22/5/2007		
	23/5/2007		
Shopping at street exposed to sunlight	16/4/2007		
	27/4/2007		
	22/6/2007		
Shopping at street beside roadside	6/6/2007		
	18/6/2007		
	20/6/2007		
Shopping at shopping centre		17/6/2007	
		16/6/2007	
		21/6/2007	
Smearing on skin			
Eloson (Mometasone Furoate Cream)		28/2/2007	
		26/5/2007	
		30/5/2007	
Triamcinolone Acetonide and Econazole Nitrate Cream		30/5/2007	
		2/6/2007	

		19/6/2007
Aloe juice	22/4/2007	
	26/4/2007	
	30/4/2007	
Honey	23/4/2007	
	28/4/2007	
	18/5/2007	
Milk	25/4/2007	
	29/4/2007	
	2/5/2007	
Water extract of claw of the		21/5/2007
garment of plain silk gauze		24/5/2007
		25/7/2007
Water extract of the body of	27/5/2007	
garment of plain silk gauze	28/5/2007	
	5/7/2007	
Water extract of <i>radix glycyrrhizae</i>	29/5/2007	
	31/5/2007	
	6/7/2007	
Water extract of <i>ginseng</i>	1/6/2007	
	3/6/2007	
	7/7/2007	
Water extract of <i>rhizome smilacis</i>	4/6/2007	
<i>glabrae</i>	5/6/2007	
	7/6/2007	
Water extract of kiwi fruit	9/6/2007	
	11/6/2007	
	10/7/2007	
Water extract of RAB	15/6/2007	
	19/6/2007	
	25/6/2007	
Water extract of <i>crocus sativus</i>	26/6/2007	
	28/6/2007	
	9/7/2007	
Oleanolic acid cream (OA mixed		29/6/2007
with Acrylamide/Sodium		30/6/2007
Acrylate/copolymer/Mineral oil)		8/7/2007
Lemon juice	18/5/2007	

(檸檬汁)	19/5/2007	
	20/5/2007	
Watermelon juice (西瓜汁)	15/5/2007	
	16/5/2007	
	17/5/2007	
Johnson moisture cream	3/5/2007	
	4/5/2007	
	5/5/2007	
Dove moisture cream	6/5/2007	
	7/5/2007	
	8/5/2007	
Triamcinolone Acetonide +		9/5/2007
Econazole Nitrate Cream		10/5/2007
		11/5/2007
Neutrogena moisture cream	12/5/2007	
	13/5/2007	
	14/5/2007	
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Physical action		
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Playing Tai-chi		16/3/2007
		28/3/2007
		9/4/2007
Playing Ba-duan- jin	17/3/2007	
	10/4/2007	
	8/6/2007	
Playing Yi-jin-jing	30/3/2007	
	11/4/2007	
	27/6/2007	
Typing thesis	19/3/2007	
	12/4/2007	
	23/6/2007	
Watching TV		20/3/2007
		1/4/2007
		13/4/2007
Watching movies		21/3/2007
		2/4/2007
		14/4/2007
Doing house work with sweating	22/3/2007	
	3/4/2007	

	15/4/2007		
Cooking and doing house work		4/4/2007	
without sweating		17/4/2007	
		11/7/2007	
Sleeping			5/4/2007
			24/6/2007
			4/7/2007
Reading books		6/4/2007	
		19/4/2007	
		3/7/2007	
Attend online lessons		7/4/2007	
		20/4/2007	
		2/7/2007	
Playing video games (Fighting	27/3/2007		
games)	8/4/2007		
	10/6/2007		
Playing online games (online chat		31/3/2007	
+ bridge or Chinese chess in		18/4/2007	
www.yahoo.com.hk)		21/4/2007	

Table 3 MAIC determination of compounds isolated from GP on chronic eczema.

Compounds	Concentration	Date of testing		
		Uncomfortable feeling	No significant change in feeling	Comfortable feeling
Blank (No application of ointment)	-		15/7/2007 16/7/2007	
Solvent blank [Application of cosmetic emulsifier only (Acrylamide/Sodium Acrylate/copolymer/Mineral oil)]	-		17/7/2007 18/7/2007	
Triamcinolone Acetonide and Econazole Nitrate Cream	-			19/7/2007 20/7/2007
1,7-dihydroxy-3,8-dimethoxyxanthone	25 mg/ mL			21/7/2007 22/7/2007
	12.5 mg/mL			23/7/2007 24/7/2007
	6.25 mg/mL			25/7/2007

		26/7/2007
3.13 mg/mL		27/7/2007
		28/7/2007
1.56 mg/ mL	29/7/2007	
	30/7/2007	
0.78 mg/mL	31/7/2007	
	1/8/2007	
0.39 mg/mL	2/8/2007	
	3/8/2007	
0.20 mg/mL	4/8/2007	
	5/8/2007	
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1,7,8-trihydroxy-3-methoxyxanthone	25 mg/ mL	6/8/2007
		7/8/2007
12.5 mg/mL		8/8/2007
		9/8/2007
6.25 mg/mL		10/8/2007
		11/8/2007
3.13 mg/mL		12/8/2007
		13/8/2007
1.56 mg/ mL	14/8/2007	
	15/8/2007	
0.78 mg/mL	16/8/2007	
	17/8/2007	
0.39 mg/mL	18/8/2007	
	19/8/2007	
0.20 mg/mL	20/8/2007	
	21/8/2007	
<hr/>		
1-hydroxy-3,7,8-trimethoxyxanthone	25 mg/ mL	22/8/2007
		23/8/2007
12.5 mg/mL		24/8/2007
		25/8/2007
6.25 mg/mL		26/8/2007
		27/8/2007
3.13 mg/mL		28/8/2007
		29/8/2007
1.56 mg/ mL	30/8/2007	
	31/8/2007	

	0.78 mg/mL	1/9//2007
		2/9/2007
	0.39 mg/mL	3/9/2007
		4/9/2007
	0.20 mg/mL	5/9/2007
		6/9/2007
1,8-dihydroxy-2,6-dimethoxyxanthone	25 mg/ mL	7/9/2007
		8/9/2007
	12.5 mg/mL	9/9/2007
		10/9/2007
	6.25 mg/mL	11/9/2007
		12/9/2007
	3.13 mg/mL	13/9/2007
		14/9/2007
	1.56 mg/ mL	15/9/2007
		16/9/2007
	0.78 mg/mL	17/9/2007
		18/9/2007
	0.39 mg/mL	19/9/2007
		20/9/2007
	0.20 mg/mL	21/9/2007
		22/9/2007
Oleanolic acid	25 mg/ mL	23/9/2007
		24/9/2007
	12.5 mg/mL	25/9/2007
		26/9/2007
	6.25 mg/mL	27/9/2007
		28/9/2007
	3.13 mg/mL	29/9/2007
		30/9/2007
	1.56 mg/ mL	1/10/2007
		2/10/2007
4',5,7-trihydroxyflavone	25 mg/ mL	3/10/2007
		4/10/2007
	12.5 mg/mL	5/10/2007
		6/10/2007
	6.25 mg/mL	7/10/2007

		8/10/2007
	50 mg/mL	9/10/2007
		10/10/2007
	100 mg/ mL	11/10/2007
		12/10/2007
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Luteolin-7-O-glucoside	25 mg/ mL	13/10/2007
		14/10/2007
	12.5 mg/mL	15/10/2007
		16/10/2007
	6.25 mg/mL	17/10/2007
		18/10/2007
	3.13 mg/mL	19/10/2007
		20/10/2007
	1.56 mg/ mL	21/10/2007
		22/10/2007
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