

## Safety of Hinokithiol (derived from Aomori Hiba) in Atopic dermatitis

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Comparison of hinokithiol derived from Hiba wood ① dissolved in Tween ② dissolved in alcohol and ③ hinokithiol derived from Taiwan Hinoki by patch tests showed less irritation by native derived hinokithiol and least or no irritation by hinokithiol dissolved in Tween. Selection of less irritant material in detergents and in skin care products is very important in atopic dermatitis.

Recently manifestation of allergic diseases on skin is increasing and shows a very difficult problem in the treatment. We proposed that conventional treatment were of little help and the elimination of shampoo, soaps and detergent which contain so many chemical ingredients and introduction of organic ingredients will give shortcut and better success. In this paper we compared hinokithiol derived from Taiwan Hinoki and those derived from Aomori-Hiba as for the safety for the skin.

### Materials and methods.

Hinokithiol derived from Hiba wood ; ①1% dissolved in alcohol ② 1% dissolved in Tween ; 1% hinokithiol from Taiwan Hiba dissolved in alcohol were used.

They were diluted to 0.1%, 0.05%, 0.025%. Patch tests were done on 15 healthy adults Using

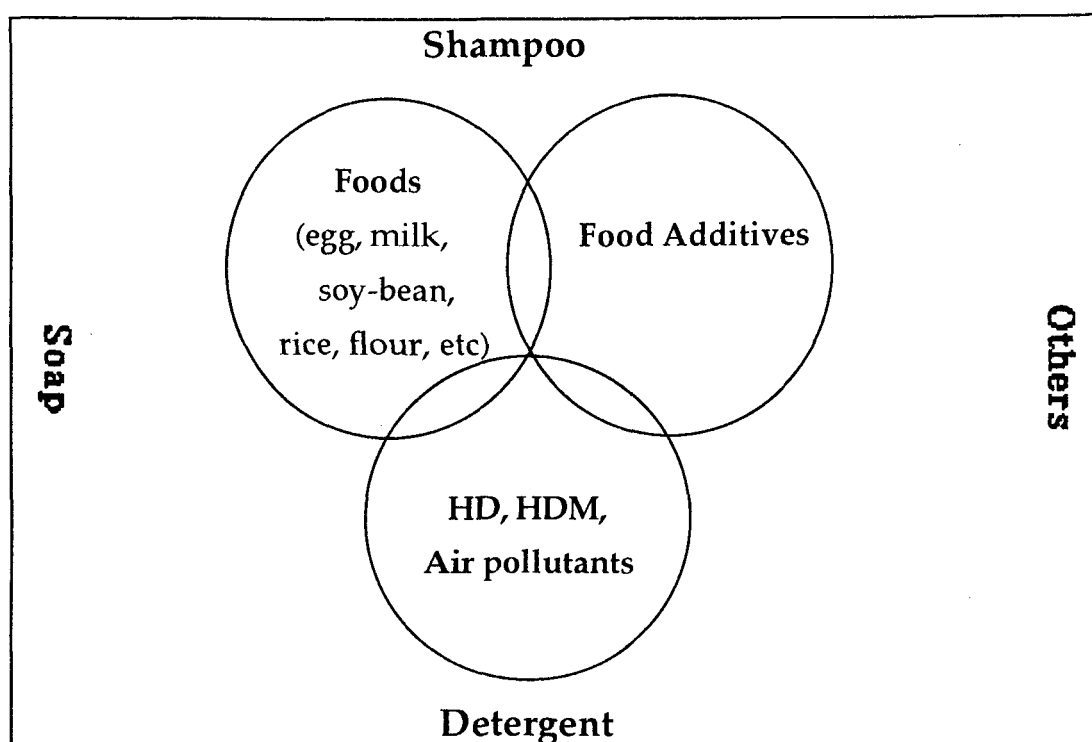
Finn-chamber (Norgen-plaster, A/S). One drop of each solution were applied on inner side of upper arms. After 48 hours, plasters were disclosed and 30 minutes later, skin reactions were analyzed according to the criteria of ICDRG in comparison with Japanese criteria. Stimulation index (SI) were calculated.

### Results (Table 1)

Stimulation Index by hinokithiol derived from Taiwan Hinoki showed 16.6 and 6.6 (mean 11.6) at 48 hours at the concentration of 0.05%, 0.005%, and 6.6 and 3.3 (mean 4.5) each at 72 hours. Aomori Hiba Hinokithiol dissolved in alcohol showed 6.6, 3.3 and 10 (mean 6.6) at 48 hours at the concentration of 0.1, 0.05, 0.005%, and 6.6, 3.3, 0 (mean 2.2) each at 72 hours. Aomori Hiba derived hinokithiol dissolved in Tween showed 0 at the concentration of 0.1%, 0.05%, 0.005% both at 48 hours and 72 hours.

**Table 1 Stimulation Index by Hinokitiol**

% %	48h			mean	72h			mean
	0.1	0.05	0.005		0.1	0.05	0.005	
Hinokitiol (Taiwan Hinoki)		16.6	6.6	11.6		6.6	3.3	4.5
Hinokitiol dissolved in Tween	0	0	0	0	0	0	0	0
Hinokitiol dissolved in alcohol	6.6	3.3	10	6.6	3.3	3.3	0	2.2



**Figure 1 Factors for the provocation and / or deterioration of atopic dermatitis**

## Discussion

Recently in modern way of life, allergic diseases are increasing and some of them showed the very difficult phase for the evaluation and management. Manifestation of allergy on the skin is one of the examples and its called atopic (= strange) dermatitis.

There have been so many controversials about the understanding and evaluation of the disease. Therefore, conventional management gives less success in the treatment of the patients.

We proposed that conventional method from the standpoint of ① IgE-dependent, food allergy ② IgE dependent HD, mites and involvement of the pollutants ③. Chemical ingredients introduced as food additives, could not explain the recent feature of atopic dermatitis. The fourth and the most important factors are the chemical ingredients contained in shampoo, Soap and detergent which is applied every day frequent on the shin. (Figure 1) From this point we recommended to eliminate those detergent and in patients introduced an organic shampoo which contained organic ingredients from herbs, Chinese-Kampo medicine and hinokithiol. Improvement of atopic dermatitis showed more than 85%.

In this experiment hinokithiol derived from Aomori-Hiba, showed less stimulation in comparison with that derived from Taiwan Hinoki. Atopic skin is feasible for the chemical irritation, for example additives such as preservatives, antiseptics, and so on. Those ingredients might act as direct irritation or as adjuvant to increase the allergic reaction.

Therefore, eliminations of those chemical ingredients and introduction and application of safer ingredients in the detergents and in shin care products might be of help in the treatment of allergic shin involvement.

## References

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