

# A Trial of Oolong Tea in the Management of Recalcitrant Atopic Dermatitis

Masami Uehara, MD; Hisashi Sugiura, MD; Kensei Sakurai, MD

**Background:** Mild cases of atopic dermatitis (AD) generally improve with standard treatment. However, standard treatment fails many patients with recalcitrant AD skin lesions. Study results in animal models have demonstrated that the administration of tea (ie, green, black, or oolong) has suppressed type I and type IV allergic reactions.

**Objective:** To test the effectiveness of oolong tea in the treatment of recalcitrant AD.

**Patients:** Although 121 patients with recalcitrant AD were enrolled in the study, 118 patients completed the open study.

**Methods:** Patients were asked to maintain their dermatological treatment. However, they were also instructed to drink oolong tea made from a 10-g teabag placed in 1000 mL of boiling water and steeped for 5 minutes. This

amount was then divided into 3 equal servings and 1 serving was drunk daily after 3 regular meals. Photographs of 2 or 3 representative lesion sites were taken at baseline and at 1 and 6 months and the severity of pruritus was assessed on a 6-point Lickert-like scale ranging from markedly improved (>50% improvement) to worsened.

**Results:** After 1 month of treatment 74 (63%) of the 118 patients showed marked to moderate improvement of their condition. The beneficial effect was first noticed after 1 or 2 weeks of treatment. A good response to treatment was still observed in 64 patients (54%) at 6 months.

**Conclusion:** The therapeutic efficacy of oolong tea in recalcitrant AD may well be the result of the antiallergic properties of tea polyphenols.

*Arch Dermatol.* 2001;137:42-43

**A**LTHOUGH STANDARD treatment of atopic dermatitis (AD) is generally effective in mild cases, there are many patients with recalcitrant AD skin lesions for whom standard therapy fails to provide adequate benefit. This may warrant trials of novel treatment of AD. Recent studies<sup>1-4</sup> in experimental animals showed that oral administration of tea (green, oolong, or black) suppressed both type I and type IV allergic reactions in the skin. We then investigated whether oolong tea has therapeutic effects in recalcitrant AD.

## RESULTS

Of the 121 patients enrolled, 118 completed the study. After 1 month of treatment, a marked or moderate improvement of skin lesions was obtained in 74 (63%) of the 118 patients (**Table**). The severity of the disease had no influence on the clinical response. The beneficial effect was first noticed after 1 or 2 weeks of treat-

ment. A good response was still observed in 64 patients (54%) after 6 months of treatment (**Figure**). Throughout the study, no patient reported clinical side effects on physical examination or had any abnormalities on routine laboratory tests.

## COMMENT

From these results, it seems reasonable to consider that oolong tea affords a substantial benefit in the management of at least some patients with recalcitrant AD.

An understanding of the pharmacological basis for the beneficial effect of oolong tea in AD is limited. Animal studies demonstrated that the polyphenol fraction of tea was mainly responsible for the suppression of passive cutaneous anaphylaxis,<sup>2</sup> and that epigallocatechin gallate, a major component of tea polyphenols, suppressed contact hypersensitivity response.<sup>3</sup> Thus, we conclude that the therapeutic efficacy of oolong tea in AD may well be the result of the antiallergic properties of tea polyphenols.

From the Department of Dermatology, Shiga University of Medical Science, Otsu, Japan.

## PATIENTS AND METHODS

### PATIENTS

After obtaining informed consent, 121 patients (mean age, 24 years; age range, 16-58 years) with refractory AD were examined. They had been receiving standard treatment (topical corticosteroids, oral antihistamines, and avoidance of aggravating factors) for at least 6 months at our outpatient clinic. There were 20 mild cases of AD, 74 moderate cases, and 27 severe cases. All patients fulfilled the diagnostic criteria of Hanifin and Rajka.<sup>5</sup> During the course of the study, patients were asked to maintain their dermatological treatments.

### METHODS

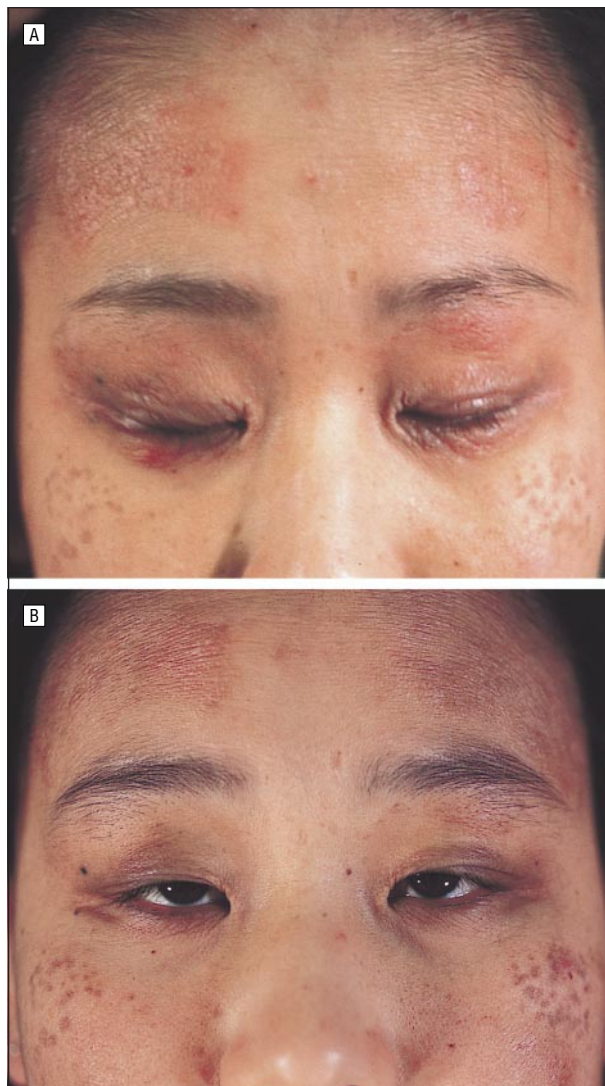
Patients were enrolled in an open study of drinking oolong tea 3 times daily for 6 months. A commercially available teabag containing 10 g of dried oolong tea leaves (Suntory Ltd, Tokyo, Japan) was placed in 1000 mL of boiling water and steeped for 5 minutes. The oolong tea was divided into 3 parts, and drunk after 3 regular meals. To ensure an objective evaluation of the skin lesions, 2 or 3 representative skin sites with active AD lesions were photographed at baseline, 1 month, and 6 months. An overall assessment of clinical symptoms was performed by comparing the photographs of the AD lesions and the intensity of pruritus at 1 and 6 months after treatment. The assessment was graded as symptoms markedly improved (>50% improvement), moderately improved (25%-50% improvement), slightly improved (<25% improvement), unchanged, or worsened.

### Efficacy of 1- and 6-Month Oolong Tea Treatment in 118 Patients With Atopic Dermatitis

Period of Oolong Tea Treatment, mo	Clinical Response to Oolong Tea, No. (%) of Patients				
	Markedly Improved	Moderately Improved	Slightly Improved	Unchanged	Worsened
1	20 (17)	54 (46)	18 (15)	22 (19)	4 (3)
6	9 (8)	56 (47)	29 (24)	21 (18)	3 (3)

Accepted for publication August 17, 2000.

Corresponding author: Masami Uehara, MD, Department of Dermatology, Shiga University of Medical Science, Tsukinowa-cho, Seta, Otsu 520-2193, Japan.



A 21-year-old patient with recalcitrant atopic dermatitis. A, View of recalcitrant lichenified lesions of atopic dermatitis on the forehead and eyelids before the patient received treatment with Oolong tea. B, After 6 months of being treated with oolong tea, the lichenified lesions of atopic dermatitis are markedly improved, leaving postinflammatory pigmentation.

### REFERENCES

- Ohmori Y, Ito M, Kishi M, Mizutani H, Katada T, Konishi H. Antiallergic constituents from oolong tea stem. *Biol Pharm Bull.* 1995;18:683-686.
- Shiozaki T, Sugiyama K, Nakazato K, Takeo T. Effect of tea extracts (catechin and caffeine) against type-I allergic reaction [in Japanese]. *Yakugaku Zasshi.* 1997;117:448-454.
- Abe Y, Shiozaki T, Sugiyama K, Takeo T. Antiallergic effect of tea, II: effect of tea on type IV allergic reaction [in Japanese]. *Wakan Iyaku Shi.* 1995;12:452-453.
- Fujii W, Yan S, Suwa Y, et al. Oolong tea suppresses allergic contact dermatitis [in Japanese]. *Hifu Kyo.* 1997;92:103-105.
- Hanifin JM, Rajka G. Diagnostic features of atopic dermatitis. *Acta Derm Venereol Suppl (Stockh).* 1980;92:44-47.