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DOES THE EASI SCORE REFLECT ITCH SEVERITY?

Itch is the prerequisite symptom for a diagnosis of atopic dermatitis (AD). Chrostowska-Plak et al¹ reported a positive correlation between itching intensity and the Scoring of Atopic Dermatitis (SCORAD) index. We report our own recent findings regarding the correlation between clinical parameters of AD and the itching intensity in AD.

Our study included 83 patients who were diagnosed as having AD according to Hanifin's diagnostic criteria.² There were 53 men (64%) and 30 women (36%) (age range, 6–56 years; mean [SD] age, 20.6 [10.2] years). After assessing the Eczema Area and Severity Index (EASI) score, we evaluated the itching intensity at the time of examination (VAS_{itch}) and the degree of sleep disturbance due to itch (VAS_{sleep}) by using a 10-cm visual analog scale (VAS). All statistical analyses were performed using SPSS statistical software, version 15.0 (SPSS Inc, Chicago, Illinois). The associations among the EASI score, VAS_{itch}, and VAS_{sleep} were determined using Pearson correlation. $P < .05$ was considered statistically significant.

The EASI score ranged from 0.4 to 56.4 points (mean [SD], 10.8 [9.8] points), VAS_{itch} from 0 to 10 cm (mean [SD], 5.4 [2.8] cm), and VAS_{sleep} from 0 to 10 cm (mean [SD], 3.9 [3.3] cm). The EASI score was not correlated with VAS_{itch} ($r = 0.169$, $P = .13$, Fig A), whereas there were significant correlations between EASI score and VAS_{sleep} ($r = 0.346$, $P = .002$, Fig B) and between VAS_{itch} and VAS_{sleep} ($r = 0.512$, $P = .001$, Fig C).

Several clinical parameters are considered for assessing AD severity.³ Of these, the EASI score and the SCORAD index are widely used and validated in clinical trials.⁴ A study comparing the usefulness of the SCORAD index and the EASI score had shown that the SCORAD index is useful for detecting the development of AD, whereas the EASI score is useful for detecting the subtle differences in the severity of AD.⁵

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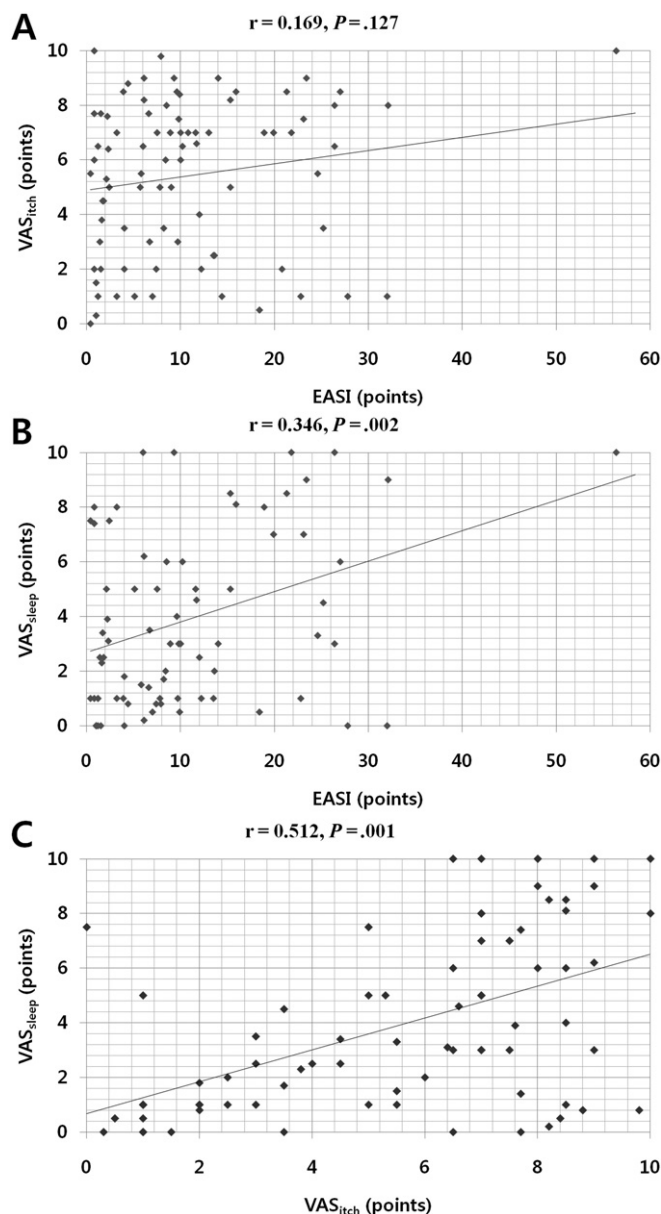


Figure. Correlation between the Eczema Area and Severity Index (EASI) score and itching intensity at the time of examination measured by visual analog scale (VAS_{itch}) (A), EASI score and degree of sleep disturbance due to itch measured by visual analog scale (VAS_{sleep}) (B), and VAS_{itch} and VAS_{sleep} (C).

Chrostowska-Plak et al¹ reported that the SCORAD index was significantly correlated with the itching intensity on the basis of the findings obtained by 2 methods: (1) validated 4-item questionnaire and (2) VAS for determining the itching intensity at the time of examination and at the time of maximal itching. However, we believe that the results of their study may not be significant because the SCORAD index involves a VAS for evaluating the itching intensity as a part of the AD assessment.¹ Therefore, in our study, EASI score was used as the clinical parameter for assessing the severity of AD to prevent the statistical bias in the interpretation of

the correlation between clinical severity and itching intensity. The results obtained in our study revealed that the EASI score is not significantly correlated with VAS_{itch}. Furthermore, the EASI score was not significantly correlated with VAS_{itch} in adult AD patients older than 18 years (data not shown).

Itch in AD is associated not only with inflammation of the cutaneous lesions but also with various other factors, such as epidermal barrier abnormality, neural processing of itch, and participation of many biologic mediators in AD development.⁶ Moreover, the threshold of itch varies in different body regions.⁷ Psychological and environmental conditions also affect the onset of itch. Thus, itch in AD may not be correlated with the severity of cutaneous lesion of AD.

VAS_{sleep} showed significant correlation with EASI score and with VAS_{itch} in our study. These results suggest that the quality of sleep in AD patients is not only influenced by the severity of the cutaneous lesions but also by the itching intensity. Therefore, management of both cutaneous lesion and itching intensity is important for better quality of sleep.

The findings of the strong correlation between SCORAD index and itching intensity in the study by Chrostowska-Plak et al¹ and our findings of no significant correlation between the EASI score and the itching intensity could provide useful information for the selection of clinical parameters for determining the severity of itch in clinical investigations. However, our study has a limitation: our patient population comprised a relatively small number of patients, and there were very young patients whose parents had replied to the questionnaire instead of the patients themselves. The lack of VAS assessment of the itching intensity at the time of maximal itching also decreases the significance of our study. Nevertheless, it is worthy of notice that different techniques of management in addition to control of cutaneous lesions are required to relieve the itch in AD patients.

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SUCCESSFUL DESENSITIZATION WITH TEMOZOLOMIDE

Temozolomide is an oral alkylating agent used for the treatment of aggressive brain tumors, such as grade IV astrocytoma, glioblastoma multiforme, and melanoma. Allergic reactions to alkylating agents are uncommon. Hypersensitivity reactions to temozolomide have been described,¹ such as urticaria,² hypersensitivity pneumonitis,³ Stevens-Johnson syndrome, and toxic epidermal necrolysis.⁴

We report the case of a 57-year-old woman with a history of allergy to trimethoprim-sulfamethoxazole and gemistocytic astrocytoma (grade 4 according to the Daumas-Duport scheme). The patient was prescribed temozolomide (Temodal), 120 mg/d for 5 days each month for 6 cycles. The first cycle was tolerated well.

The patient was referred to our clinic after the onset of symptoms of pruritus, generalized erythema, and angioedema 10 minutes after taking temozolomide on the third day of the second cycle. Her symptoms were resolved with methylprednisolone 80 mg, and dexchlorpheniramine 2 mg. Baseline serum tryptase and total IgE levels were 3.56 µg/L (reference range, <13.5 µg/L) and 89 IU/L (reference range, <100 IU/L), respectively.

To confirm a hypersensitivity reaction to temozolomide, we performed an oral provocation challenge with 120 mg of temozolomide; 60 minutes after the challenge, the patient developed pruritus in the hands, facial angioedema, dyspnea, hypotension (blood pressure, 74/45 mm Hg), and vomiting, which were resolved 30 minutes after administration of adrenaline 0.6 mg, methylprednisolone 60 mg, and dexchlorpheniramine 5 mg.

Skin testing was not performed because the procedure has not been validated for temozolomide and because of our lack of knowledge on its potential skin toxicity. Two hours after the reaction, serum tryptase and total IgE levels were 4.28 µg/L (reference range, <13.5 µg/L) and 81 IU/L (reference range, <100 IU/L), respectively.

No alternative treatment for this patient existed, leading us to perform a desensitization protocol with temozolomide according to other publications regarding desensitization with other chemotherapy agents.¹

On the first day of each cycle, the patient was admitted to our hospital and was given cetirizine 10 mg, lorazepam 0.5 mg, and ranitidine 150 mg, 30 minutes before the initiation of the protocol. Our protocol was as follows: 0.025 mg, 0.05 mg, 0.1 mg, 0.5 mg, 1 mg, 2 mg, 5 mg, 10 mg, 20 mg, 30 mg, 60 mg, and 110 mg at an interval of 30 minutes between doses. The maximum dose was set at 238.6 mg according to the recommendation of an oncologist.

Sixty minutes after the last dose, the patient developed erythema and pruritus in the palms, which resolved in 20 minutes with methylprednisolone 40 mg, and dexchlorpheniramine 5 mg. On the second day she was given 120 mg and 120 mg at an interval of 30 minutes; having tolerated this well, she was discharged. Once at home, the patient demonstrated tolerance to 240 mg/d for the rest of the cycle.

In light of this response, for the next 5 desensitization cycles the patient was also given prednisone, 30 mg, 30 minutes before initiation. In addition, we included one more step to the protocol: 0.025 mg, 0.05 mg, 0.1 mg, 0.5 mg, 1 mg, 2 mg, 5 mg, 10 mg, 20 mg, 30 mg, 50 mg,

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