

# Measurement of Atopic Dermatitis Disability

Hee Chul Eun, M.D., A. Y. Finlay\*, M.D.

*Department of Dermatology, College of Medicine, Seoul National University Seoul, Korea.*

*\*Section of Dermatology, Department of Medicine, University of Wales, College of Medicine, Cardiff, U.K.*

**Fifty-five patients completed a questionnaire to assess disability caused by atopic dermatitis. The eleven most relevant questions were identified and an Atopic Dermatitis Disability Index (ADDI) calculated. The index correlated with the clinical severity score ( $r_s=0.273$ ,  $0.01 < 0.05$ ). The index may be used as a simple repeatable record of disability caused by atopic dermatitis and may potentially aid management decisions. (*Ann Dermatol* 2:(1) 9-12, 1990)**

*Key Words:* Disability, Atopic dermatitis

To a patient, an important aspect of having a skin disease is the resultant disability and disruption of his or her life, but this is seldom assessed in any structured manner.

There have been attempts to objectively assess disability in patients with occupational contact dermatitis, because of the stimulus of compensation claims.<sup>1</sup> This attempt was strictly based on anatomical and functional impairment as judged "objectively" by a doctor. In contrast, the frequency of different aspects of disability as judged by the patient in eczema has been recorded, but this information was not collectively quantified.<sup>2</sup>

A technique for quantifying disability in psoriasis has been described<sup>3</sup> and we have modified that questionnaire for use in adults with atopic dermatitis. The aims of this study, therefore, were to use a questionnaire method to measure disability caused by atopic dermatitis and to determine whether there is any correlation between total measured disability and severity of adult atopic dermatitis.

## MATERIALS & METHODS

Atopic dermatitis "disability" was defined for the

Received November 20, 1989

Accepted for publication February 7, 1990.

**Reprint request to:** H.C. Eun, M.D., Department of Dermatology Seoul National University Hospital 28 Yunkun-Dong Chongno-Ku, Seoul 110-744 Korea.

purposes of this study as those practical aspects of a patient's life which were altered by the presence of the disease. The definition excluded direct consideration of the patient's attitudes or feelings, toward the disease or his and her symptoms.

Fifty-five patients (22 male, 33 female) over 20 year old with atopic dermatitis who had attended the University Hospital of Wales in recent years were studied. The age distribution of patients was 20-39 years: 33, 30-39 years: 10, >40 years: 12. 47 of the patients were recruited by post, the others were either inpatients or outpatients regularly attending the hospital's clinic. 16 patients were either housewives, retired or unemployed. All patients fulfilled the diagnostic guidelines for atopic dermatitis.<sup>4</sup>

Every patient completed a questionnaire with a single interviewer and the severity of atopic dermatitis was assessed based on extent and degree of activity using the method described by Rajaka.<sup>5</sup>

The questionnaire which consisted of 28 questions covered most aspects of atopic dermatitis disability (Table 1). Patients were instructed to answer questions with reference to disability experienced over the immediate recent 12 months. Answers were recorded on a seven point linear scale where '1' indicated no disability and '7' maximum disability.

Spearman rank correlation coefficients were cal-

**Table 1.** Atopic, Dermatitis Index questionnaire

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For the past one year

Daily activities

1. C How much has your atopic dermatitis interfered with you carrying out work around the house or garden?
2. A How much has your atopic dermatitis interfered with the preparation of food.?
3. A How often have you worn different types or colours of clothes because of your atopic dermatitis?
4. A How much has your atopic dermatitis presented you from using public transport?
5. C Have you had many problems when you go shopping because of your atopic dermatitis?
6. C Has your atopic dermatitis made things difficult for you when buying clothes?
7. B How much more do you have to change or wash you clothes?
8. A Has your atopic dermatitis been much of a problem at the hairdressers?
9. C Has your atopic dermatitis interfered with your sleep?
10. B has your atopic dermatitis resulted in your having to take more baths than usual?

Work

11. C How much has the appearance of your atopic dermatitis been a problem at work?
12. C Has your atopic dermatitis made lose time off work.?
13. A Has your atopic dermatitis prevented you doing any things at work?
14. A Have you lost out financially because of your atopic dermatitis
15. A Has your career been affected by your atopic dermatitis? (e.g. promotion refused, lost a job, asked to change a job).

Personal relationships

16. C Has your atopic dermatitis made it difficult for you to make new friends?
17. A Has your atopic dermatitis made it awkward to shake hands?
18. B Has your atopic dermatitis resulted in sexual difficulties?
19. C Has your atopic dermatitis created problems with your partner or any of your close relatives?

Leisure

20. C How much has your atopic dermatitis interfered with any of your hobbies?
21. B How much has your atopic dermatitis stopped you going out socially or to any special functions?
22. A Is your atopic dermatitis making it difficult for you to do any sport?
23. B Have you been unable to use or criticized or stopped from using communal bathing or changing facilities?
24. B Has your atopic dermatitis interfered with any holiday or travel plans?
25. A Has your atopic dermatitis resulted in you smoking or drinking more than you would do normally?

Treatment

26. B To what extent has your atopic dermatitis or treatment made your home messy or untidy?
27. C Has treating yourself at home resulted in embarrassment with friends or callers?
28. C Has your atopic dermatitis or treatment resulted in you having to sleep in a different bed or room?

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Questions (A) had a weak correlation with other questions (B) had a strong correlation with other questions (C) formed ADDI

culated for each answer against every other variable including the clinical severity scales.

The original questionnaire was then abbreviated. Ten questions which correlated poorly with other questions were excluded (questions A in Table. 1). These were selected as correlating well with less than four other questions ( $p < 0.001$ ). Six questions asking for similar or parallel information to other questions were also excluded (questions B in Table 1). These were selected because of high corre-

lation with more than six other questions ( $p < 0.001$ ).

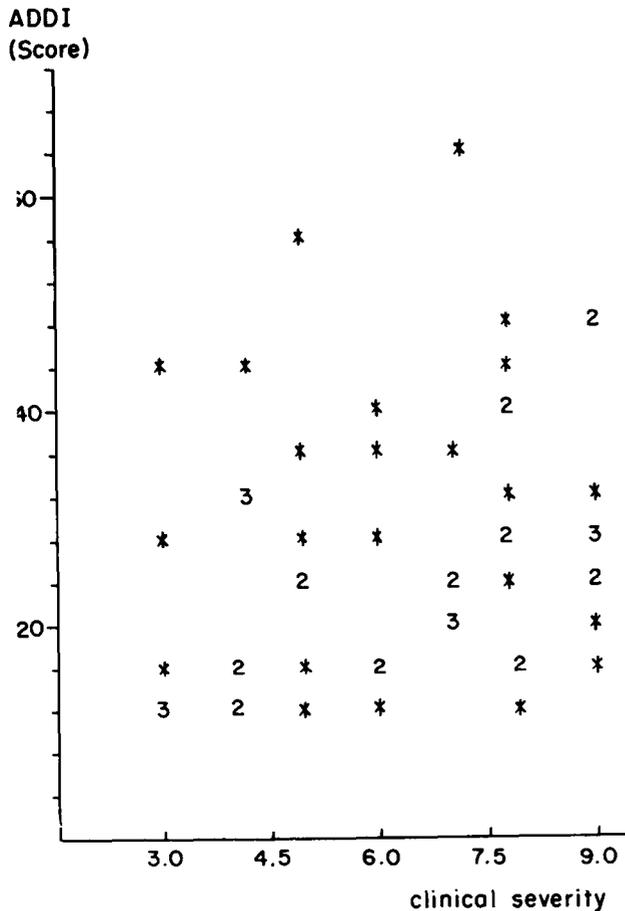
Some questions from each category were retained in order to cover all aspects of disability. Eleven questions about disability were finally left to form a smaller final questionnaire (questions C in Table 1).

We defined the Atopic Dermatitis Disability Index (ADDI) in terms of the summed answers to these 11 questions.

**RESULTS**

Only one question among the 11 questions comprising the ADDI is well correlated ( $p < 0.05$ ) with the clinical severity score of atopic dermatitis. However, there is a good correlation between the total ADDI and the clinical severity score ( $r_s = 0.273$ ,  $0.1 < p < 0.05$ ), although a wide range of scatter of results was observed (Fig. 1).

There was no significant difference in ADDI between male and female groups, and between those working and those not working (both  $p < 0.05$ , Mann-whitney U test).



**Fig. 1.** Correlation between clinical severity and atopic dermatitis disability index (ADDI), Spearman rank correlation coefficient ( $r_s = 0.273$ ,  $0.01 < p < 0.05$ ) 2:2 astritiks on the same spot, 3:3 astritiks on the same spot  
\*clinical severity score was adapted from Reference 5.

**DISCUSSION**

The "disability" assessed in this study is different from that assessed in occupational contact dermatitis for purposes of compensation. In the latter

the disability is based on permanent impairment, as is judged by a doctor.<sup>6,7</sup> In contrast the disability measured in this study covers wider aspects of the patient's daily life and also was judged subjectively by the patient. This kind of subjective disability index clearly cannot be used to determine the degree of disability in an individual in need of compensation. It may, however, be a more useful method for the evaluation of a patient's disabled status in general.

We have modified the assessment method used in the previous study<sup>1</sup> by relating the disability questions to the previous year instead of the previous four weeks.

Subjective disability assessment can be influenced by a patient's psychological status or response. In the abbreviated questionnaire there is only one question in common in both the psoriasis<sup>3</sup> and the atopic dermatitis disability indices. This may be due to different degrees of psychological influence in these diseases. There is some evidence that atopic dermatitis is much more influenced by emotional and psychological factors than psoriasis,<sup>8,9</sup>

For each patient effective treatment is the prime answer to their disease. However in most patients total control of their atopic dermatitis is very difficult.

A disability index therefore may be used as a repeatable record of another aspect of the clinical state of the patients. However, the ideal method of disability assessment is still far from complete. For example disability indices of this kind need to take into account differences in social status, geographic area and customs. Further studies are necessary to produce more reliable and reproducible methods of assessing disability in skin diseases.

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