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DETERMINING THE SEVERITY OF ATOPIC DERMATITIS IN CHILDREN PRESENTING IN GENERAL PRACTICE: AN EASY AND FAST METHOD

Dermatology

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ABSTRACT

Assessment of the severity of atopic dermatitis (AD) is necessary to evaluate the disease process. This study evaluates and validates the TIS in children with AD presenting in general practice. We determined the severity of AD using the TIS and the objective SCORAD. The interobserver agreement for the TIS and SCORAD was calculated, as was the correlation between TIS and SCORAD. The mean time to assess the TIS was less than one minute. A moderate-to-good agreement between the observers was found for the TIS (κ 0.604 or 0.464), or SCORAD (κ 0.695 or 0.700). There was an excellent correlation between TIS and SCORAD (rs 0.755–0.839). In conclusion, the TIS is an easy and fast method to score AD. Because of the moderate to good interobserver agreement and the high correlation with the SCORAD, we recommend the TIS to determine the severity of AD in general practice.

KEYWORDS

Atopic Dermatitis, Severity

INTRODUCTION

Valid and reliable clinical outcome measures are prerequisites for evidence-based practice.We selected 20 different measurements of AD disease severity. Of these, only the EASI (Eczema Area Severity Index), POEM (patient-oriented eczema measure), and SCORAD (SCORing Atopic Dermatitis) index have been sufficiently validated to recommend their use in clinical trials and everyday practice. The most widely used clinical scoring system is the SCO- RAD index. The SCORAD index (including six objective items and two subjective issues) or the objective SCORAD from now on, without subjective measures) is an excellent system for clinical trials but is too complicated and time consuming (scoring takes about 7–10 minutes per patient) for a routine clinical setting. For this reason, the Three Item Severity score (TIS), a simplified version of the SCORAD, was developed. The TIS has been tested in a dermatology outpatient department; a high correlation and a moderate-to-fair interobserver agreement were found between the TIS and the SCORAD. The Dutch College of General Practitioners' guideline on AD recommends treating patients according to the severity of AD. The guideline acknowledges that the value of the TIS has not yet been established in general practice and recommends more research in this area. Therefore, the present study explored whether the TIS is useful in children treated in general practice. For this, we evaluated and validated the TIS, and calculated the interobserver agreement for and the correlation between the TIS and the SCORAD.

MATERIAL AND METHODS

This prospective study included were all patients with AD under 7 years of age. The children were selected from the computerized files of general practitioners (Gps). Children were selected either by diagnosis, coded according to the International Classification of Primary Care (ICPC) or by prescribed medication, coded according to the Anatomical Therapeutic Chemical (ATC) classification scheme.Patients were selected using the ICPC code S87 (Atopic Dermatitis), and/or ATC codes for topical treatment of AD (zinc products, soft paraffin, and fat products, other emollients and protectives, tars, topical corticosteroids, all different potencies), and according to the inclusion and exclusion criteria .The study was approved by the ethics committee of Eras- mus MC. All parents provided written informed consents to participate in the study.The SCORAD index consists of the interpre tation of the extent of the disorder, that is, the intensity, composed of six items (erythema, oedema/papules, effect of scratching, oozing/crust formation, lichenification, and dry- ness), and two subjective symptoms (itch and sleeplessness); the maximum score is 103 points . In the SCORAD the subjective symptoms (itch and sleeplessness) are not assessed; the total score is 83 points. “Bonus points” for disfiguring lesions or functional limiting lesions will receive 10 extra points. The TIS is the sum of the three items: erythema, oedema, and excoriations (scored on a scale from 0 to 3); each item should be scored on the most representative lesion, that is, a lesion which represents the mean intensity for that item. The total scores of the TIS and SCORAD were calculated per patient for each observer. The total scores of the TIS (0–9) and the SCORAD (0–83/93) were then categorized into three groups: mild, moderate, and severe. We chose to categorize the scores into these groups since treatment of AD is based on this classification. Statistical analysis was performed with SPSS version 15 (SPSS Inc, Chicago) and STATA version 10

RESULTS

A total of 278 patients with an age below 7 years and with a history of AD (ICPC S87) or use of medical treatment for AD were selected in the database. Of these, 89 had self-reported complaints of AD at the moment and were willing to participate. Finally 66 patients were included in the study. Twenty three children were excluded for the following reasons: 12 had no AD complaints at the time of inclusion, 3 parents were unable to fill in the consent forms and another 8 were excluded because their answer forms were received after the inclusion period had closed. Thus, the final study population consisted of 66 patients (57.6% girls, mean age of 31 months—range 0.5–83 months). Of these, 50 were examined by two observers and 16 by three observers. All 66 patients were available for the first visit, and 65 patients were observed during the second visit. The mean TIS scores were 2.1 (SD □ 1.1, determined at the first visit) and 1.8 (SD □ 1.0, at the second visit). The mean SCORAD scores were 13.5 (SD □ 8.7) at the first visit and 11.9 (SD □ 7.8) at the second visit. The severity of AD was predominantly mild, accounting for 73% of the cases according to the TIS (score 0–2) and for 70% of the cases according to the SCORAD (0–14). Moderate AD accounted for 24.6% according to the TIS (score 3–5) and for 27.6% according to the SCORAD (score 15–40). Severe AD accounted for 2.4% in both scoring systems.The mean time to assess the TIS per patient was 43 seconds (range 7–170). Moderate-to-good interobserver agreement (weighted κ □0.604 for visit 1 and 0.464 for visit 2) was found between the two observers for the categorized TIS (i.e., severity classified into mild, moderate, and severe). Similar results were found in a smaller group where patients were observed by three observers (Table 3). For the SCORAD (categorized into mild, moderate, and severe) the interobserver agreement also showed a good agreement (κ □0.665 for first visit and κ □0.776 for second visit).

DISCUSSION

In the present study a moderate-to-good interobserver agreement was found between the observers for the TIS. The TIS is a simple method to determine the severity of AD, and assessment of the total TIS took about 43 seconds per patient. Therefore, the TIS is suitable for use in daily practice. Because a good correlation was found between the TIS and the different intensity items, we conclude that these items (erythema, oedema, and excoriations) are suitable determinants to

evaluate the severity of AD with the TIS. In accordance with other studies, we found a good correlation between the TIS and SCORAD. The classification of the severity of AD into mild, moderate, and severe also showed good correlations, but were lower than the uncategorized scores. A possible explanation is that these categorized scores were rearranged on an arbitrary line. Thereby, some patients had a difference of only one point between the two observers on the TIS, but were placed in a different category (mild, moderate, or severe). When the patient scores were uncategorized, these minor differences between the observers had no influence on the calculated correlation; therefore, these correlation scores are higher. The high correlation between TIS and SCORAD is not surprising, because the TIS is a simplified version of the SCORAD. A weakness of this study is that, because we included patients who had already received treatment for AD, the severity of their AD was probably diminished at the time of the first visit.

CONCLUSION

In conclusion, the TIS is an easy and fast scoring system. Because of the moderate-to-good interob- server agreement and the high correlation with the SCORAD, we recommend that the TIS be used to determine the severity of AD in general practice.

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