

Conflict of interest: None declared.

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The infra-auricular fissure: A bedside marker of disease severity in patients with atopic dermatitis

To the Editor: Monitoring the severity of atopic dermatitis (AD) is crucial to disease management. Tools exist to assess disease severity for experimental studies; these tools are not practical in a high-volume clinical setting.¹ Thus, a simple bedside marker of AD severity would be a useful addition to the armamentarium of AD management.

The presence of an infra-auricular fissure in patients with AD has been previously noted.²⁻⁵ Although these studies have examined the prevalence of the infra-auricular fissure, its definition varies substantially between studies. In addition, to our knowledge, no previous study has correlated the severity of the fissure with AD severity. Therefore, the goal of the current study was to determine if the severity of the infra-auricular fissure can be used as a bedside marker for AD and associated itch severity. Further, we wanted to determine whether this marker correlates with other validated tools of eczema severity such as the Eczema Area and Severity Index (EASI) and Investigator's Global Assessment (IGA).

Patients presented to the Wake Forest Dermatology Clinic, Winston-Salem, NC, between July 2010 and January 2011 with a clinical diagnosis of AD as defined by Hanifin and Rajka.⁶ Patients with

demonstrated infra-auricular fissures and no additional dermatologic conditions other than AD were included as subjects. Infra-auricular fissure assessment was based on fissure depth, erythema, scaling, and oozing/crusting (Fig 1). Infra-auricular scoring was performed by two physician researchers not directly involved in the care of the patient; assessment of EASI and IGA scores was used to measure AD severity.

Patients 7 years of age or older were asked to rate on a numerical visual analog scale of 1 to 10 their average itch intensity during the last week. Patients younger than 7 years had itch intensity assessed by asking parents to rate their child's itch. A subset of patients was followed up in clinic between 1 to 2 months after the initial visit. At this visit, EASI score, IGA score, itch intensity, and infra-auricular fissure score were reassessed.

All analyses were performed using Spearman correlation to analyze the relationship of infra-auricular fissure score with EASI score, IGA score, and itch intensity. Wilcoxon signed rank test evaluated differences between first and second visit parameters. Statistical significance was set at P less than .05.

In all, 81 patients (48 male, 33 female) with a mean age of 7.5 (range 1-61) years were enrolled. Patients were Caucasian (44), African American (20), Hispanic (9), and Asian (8). The percentages of patients with an infra-auricular fissure score of 1, 2, and 3 were 58%, 27%, and 15%, respectively.

A high correlation coefficient was found between infra-auricular fissure score and EASI score (0.6, $P < .001$) during the first patient visit (Fig 2). Similarly, of the 29 patients who returned for a follow-up visit after 1 to 2 months, the correlation coefficient between infra-auricular fissure score and EASI and IGA scores were 0.4 ($P < .05$) and 0.5 ($P < .01$), respectively.

No correlation was found between visual analog scale scores of itch intensity and infra-auricular fissure score during the initial visit. However, of the 29 patients who returned, the correlation coefficient between infra-auricular fissure score and visual analog scale scores for itch intensity was 0.6 ($P < .01$). These patients experienced a mean improvement in fissure score (1.6-0.8) associated with a significant reduction in EASI score, IGA score, and itch intensity.

This study demonstrates that the infra-auricular fissure can be used as a bedside tool to assess the severity of AD. Specifically, the results of the study imply a direct correlation between the appearance of the infra-auricular fissure with AD severity. This tool's utility is underscored by its presence among

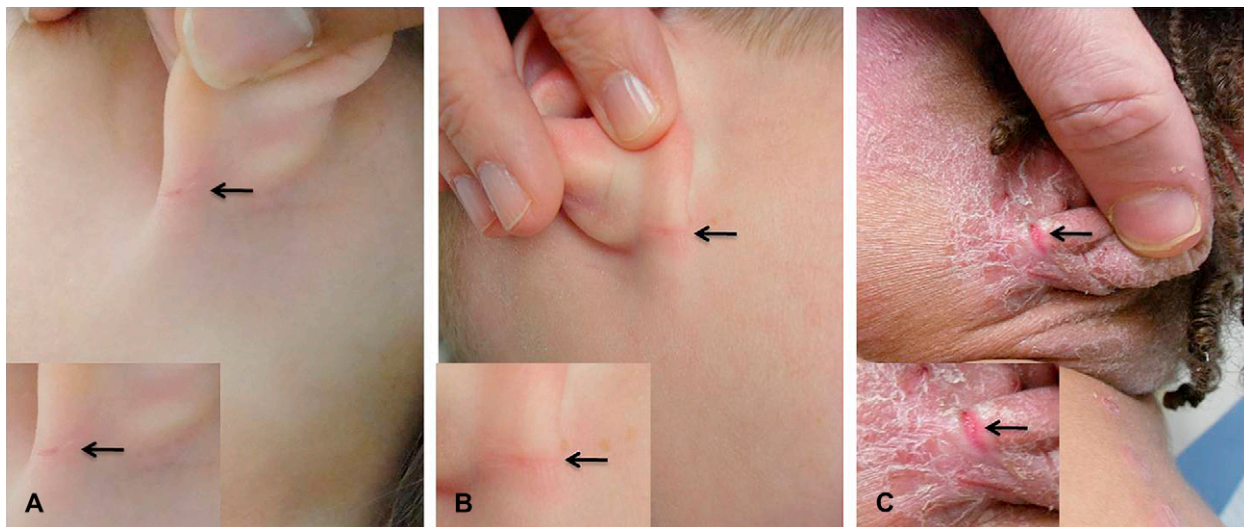


Fig 1. Infra-auricular fissure scoring. **A**, 1 = Infra-auricular line present. **B**, 2 = Infra-auricular line with erythema and small fissure present. **C**, 3 = Significantly eroded infra-auricular fissure.

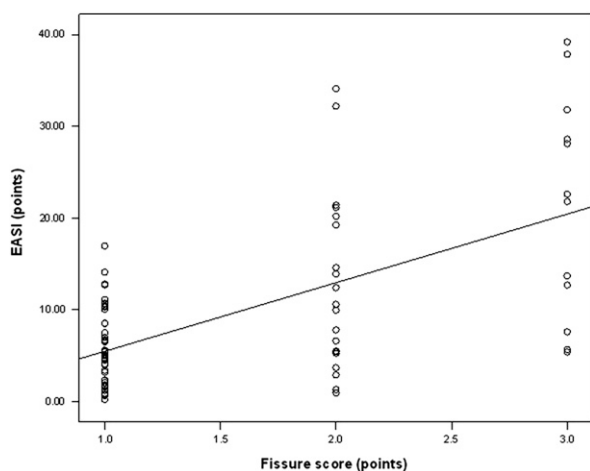


Fig 2. Comparison of fissure score with Eczema Area and Severity Index (EASI) score from first patient visit.

patients of all ages, both genders, and all ethnic groups since AD presents differently in infancy, childhood, and adulthood and has various ethnic presentations.⁴

In conclusion, in patients with AD in whom the infra-auricular fissure is present, the severity of the fissure may serve as an easy and convenient bedside marker for disease activity.

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