Atopic Dermatitis Needs Assessment

Atopic dermatitis (AD) affects more than 4% of adults and 10% of children, making it the most common chronic inflammatory skin disease.[1,2] A recent longitudinal study found that childhood AD symptoms persisted well into adolescence and longer, suggesting that AD may persist more commonly than previously recognized.[3] Furthermore, AD poses a significant economic concern and a substantial burden on physical and emotional health and social wellbeing.[4]

Treatment failure is an unfortunate issue surrounding AD. One reason for treatment failure is that AD has a highly complex clinical presentation, leading to frequent misdiagnosis.[5] One study found that more than one-half of patients referred to a specialist were not administered treatment.[6] Clinicians often do not have the time for proper education of patients and caregivers surrounding treatment, which can lead to compliance issues.[7] However, the past year has shown enormous progress when it comes to approved therapies.

In a recent editorial, Jonathan and Nanette Silverberg stated, "AD has just begun to command the respect it deserves as a chronic disease with negative life impact and comorbidities. The future holds new definitions, better recognition of disease manifestations, superior surveillance for comorbidities, and an impressive improvement in therapeutic interventions. This is truly an exciting time for patients with AD, the people who suffer with them, and clinicians who treat AD." Therefore, educating clinicians on diagnostic criteria, current treatment guidelines, and new and emerging therapies will reduce treatment failure rate.

In this period of rapid pharmaceutical progress in AD, up to date education is critical for dermatologists, allergists, and all primary care physicians providing care to atopic dermatitis patients.

This comprehensive needs assessment is based on gap analysis of the practices and educational needs of primary care providers, allergists and dermatologists who may encounter patients with AD. This document includes a review of the recent medical literature, current practice guidelines, and relevant accredited medical education activities. Through this assessment, National Jewish Health has determined that an educational activity is warranted.

Gap Analysis 1

Clinicians need the knowledge and skills to properly evaluate and diagnose patients with AD

Knowledge/practice gap	Clinicians are challenged to properly assess and diagnose patients with AD.
Desired results	Clinicians are equipped with the knowledge and tools to properly assess and diagnose patients with AD.
Learning objective	1-Describe the burden of illness in patients with AD using different assessment tools 2-Identify patient centered assessment measures 3-Identify barriers to the proper diagnosis of patients with AD 4-Assess the clinical phenotype of AD

AD (eczema) has a detrimental effect on the lives of patients and their families, including impact on quality of life (QoL) as well as social, economic, academic, and occupational consequences.[4] Not surprisingly, many studies have observed that QoL decreases as AD severity increases.[8-10] In children, effects on physical health (itching, scratching, sleep, pain), emotional health (irritability, crying), and social functioning are profound. One study examining children with chronic diseases found that generalized AD had the second-largest impact on QoL.[11] Adult patients appear to be most affected by physical symptoms (itch and sleep disturbance) and emotional impact, and sleep and emotional burdens are also seen in parent caregivers of young children with AD.

The annual costs of AD in the United States are thought to exceed $5.3 billion.[4] The International Study on Life with Atopic Eczema reported that 32% of participants believed that AD affected their school or work life, and 14% of adults believed that AD had hindered their career progression.[12]

The wide-ranging impact of AD on patients and their families dictates a need for clinician education about the burden of disease and quality of life measures in AD .

The clinical phenotype of AD is highly complex, varying substantially based on patient age, disease severity, age of onset, and ethnic origin of the patient.[13] At least four distinct clinical features have been defined, which include infantile, childhood, adolescent/adult, and elderly phenotypes. AD presents as very mild to extremely severe phenotypes.

The onset of AD may occur at various life stages; from very early (between 3 months and 2 years), early (between 2 and 6 years), childhood (between 6 and 14 years), adolescent (between 14 and 18 years), adult (between 20 and 60 years), to very late (older than 60 years).[13]

The diagnosis of AD is based on historical features, skin morphology and distribution of lesions and associated clinical features. There are no reliable biomarker or serological tests that can support the AD diagnosis.

Numerous instruments for the assessment of AD severity have been developed, -as many as 28 scales-, the most commonly used being the Scoring Atopic Dermatitis (SCORAD) Index, the Eczema Area and Severity Index (EASI), the Investigator Global Assessment (IGA) tools and the Six Area, Six Sign Atopic Dermatitis (SASSAD) tools. These tools are well validated by the literature and measure objective disease features and extent, intensity and history of eczema, as well as subjective features such as pruritus and sleep loss.[14]

Additional scales that assess patients' quality of life, such as the Dermatology Life Quality Index (DLQI)Children's Dermatology Life Quality Index (CDLQI), the Dermatitis Family Impact (DFI) have also been developed. Patients with atopic dermatitis frequently report lack of sleep due to pruritus and itching, pain related to sore and itchy skin, negative interference on school, work, interpersonal relationships and normal activities and most importantly; depression and anxiety. [14]

These scales were primarily designed for use in clinical trials and are not applicable in clinical practice. Therefore, none of them have been recommended as the golden standard.[14]

The irregular use of different assessment scales among physicians in clinical practice results in high variability in reported outcomes. An international effort was undertaken to standardize measured outcomes by looking at signs and symptoms of AD. To this end, the Harmonizing Outcome measure for Eczema (HOME) initiative study, has defined a core outcome set (COS) across the main outcome domains of clinical signs, symptoms, quality of life and long-term control as mandatory measures in all atopic eczema trials to ensure cross-trial comparison.[15]

A study assessing the intra and inter reliability of the SCORAD, EASI and IGA tools showed no significant advantage of one method over the other, and recommended the use of at least 2 independent measurements simultaneously to ensure reliability.[16]

Each tool has different features that may allow a patient centered approach to diagnosis. For example, EASI uses objective physician estimates of disease extent and severity while SCORAD incorporates objective and subjective patient perceptions of sleep loss and itch[4]. In contrast, the Patient Oriented Eczema Measures (POEM) tool is a unique approach that measures severity from a patient perspective with seven questions relating to symptoms and their frequency. The HOME initiative encouraged all physicians to use POEM as the core outcome instrument to measure symptoms of AD in all future trials[3,4].

To minimize variability in measurements of AD severity, clinicians should be educated about all the assessment tools available and use a patient centered diagnostic approach.

Furthermore, several studies confirmed variations of the clinical phenotype depending on ethnic origin of the patient. For example, one study reported a different clinical picture of AD lesions in African American patients compared to the Caucasian patient population.[17] Such broad clinical presentation leads to a frequent misdiagnosis of AD [5] and to its differential diagnosis.

The diagnosis of AD may be straightforward in infants and children but can be difficult to make in adults. The differential diagnosis of adults and children with AD includes seborrheic dermatitis, psoriasis, allergic contact dermatitis, molluscum dermatitis, tinea corporis, mycosis fungoides, dermatomyositis, pityriasis lichenoides chronica, Langerhans cell histiocytosis, polymorphous light eruption, actinic prurigo, and nutritional deficiency.[5]

Clinicians need to recognize the various AD clinical phenotypes in both adults and children to provide the correct diagnosis of AD.

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