



REVIEW

The Unmet Needs in Atopic Dermatitis Control in Latin America: A Multidisciplinary Expert Perspective

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ABSTRACT

Introduction: Adoption of control tools for atopic dermatitis (AD) in Latin America (LA) is currently very limited. Clinical assessment tools represent a practical method to measure the impact of treatment on disease activity and on the quality of life of patients. However, the use of these tools in the LA clinical practice setting is limited.

Methods: A selected panel of Latin American experts in fields related to atopic dermatitis

were provided with a series of relevant questions to address prior to the multi-day conference. Within this conference, each narrative was discussed and edited by the entire group, through numerous drafts and rounds of discussion, until a consensus was achieved.

Results: The panel proposes specific and realistic recommendations for implementing control tools for AD care in LA. In creating these recommendations, the authors strove to address all barriers to the widespread use of these tools.

Conclusion: This article includes a narrative analysis of barriers to AD control in LA and

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provides necessary recommendations to integrate and increase the use of validated AD control assessment tools throughout the region.

Keywords: Atopic dermatitis; Latin America; Control tools; PROMs; CROMs

Key Summary Points

Achieving atopic dermatitis (AD) control is a complex task that requires concerted efforts between the patients and physicians, using the correct tools, and rigorous adherence to treatment

Clinical assessment tools are a practical method to measure treatment impact on disease activity and patient quality of life; however, despite global data supporting the use of these tools, their use in clinical practice is limited in Latin America (LA)

Within this article, the authors highlight the potential benefits of and barriers to incorporating a validated control assessment tool for AD into routine clinical practice in LA

Validated AD control assessment tools allow physicians to obtain information about disease control, treatment response, and patient satisfaction and can help develop optimal management strategies

In LA, AD assessment tools may provide a way forward in the comprehensive care of patients with AD and allow for shared decision-making, patient empowerment, and standardized care

INTRODUCTION

Atopic dermatitis (AD) is a chronic, relapsing, intensely pruritic inflammatory disease of variable course and prognosis, associated with physical and emotional comorbidities, especially in patients with moderate-to-severe AD [1, 2]. AD etiopathogenesis is multifactorial and is the result of disruptions in the cutaneous barrier, immune dysregulation, and certain genetic and environmental factors [3]. Dermatological disease burden is well studied, representing significant health expenditure and deteriorations in quality of life (QoL) [4].

Clinical assessment tools represent a practical method to measure the impact of treatment on disease activity and on patient's quality of life. However, their use in clinical practice is limited, especially in Latin America (LA). This article includes an analysis of barriers to AD control in LA and provides necessary recommendations to integrate and increase the use of validated AD control assessment tools throughout the LA region. Unifying criteria and universalizing the methods used for AD assessments are necessary to standardize AD care in LA. However, this concept is a challenging task due to the region's diversity of ethnicity, culture, public spending, health policies, and climate.

METHODS

To address the above issues, the Americas Health Foundation (AHF) identified clinicians and scientists with an academic or hospital affiliation who are experts in the field and who have published in the AD arena since 2014. As a result of this effort, AHF convened a six-member panel of clinical and scientific experts from LA. Great attention was paid to ensure a diverse group representing various disciplines related to AD (allergy, dermatology, immunology, and pediatrics).

To better focus discussion, AHF staff independently developed specific questions, addressing the salient issues on the subject, for the panel to address. A written response to each question was initially drafted by a different

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member of the panel. During the multi-day meeting of the panel, each narrative was discussed and edited by the entire group through numerous drafts and rounds of discussion until complete consensus was obtained. The objective of this article is to create a practical document with standardized recommendations for assessing AD in LA. This article is based on previously conducted studies and does not contain any new studies with human participants or animals performed by any of the authors.

EPIDEMIOLOGY

The prevalence of AD has continuously increased globally in children and adults, reaching 5–20% and 2–10%, respectively, and is one of the highest prevalence of inflammatory dermatological diseases [5–9]. A review on AD prevalence in tropical countries, predominantly in LA, found that prevalence was higher compared with other regions, suggesting that some genetic and environmental factors promote the development of AD [10]. The same study found prevalence discrepancies of 1–15%, even in the same population, possibly explained by the lack of unanimity in diagnostic criteria, among other factors [10].

Likewise, the ISAAC phase 3 trial included a large, representative sample of LA children over the span of 7 years that found varying prevalence. In the 6- and 7-year-old groups, prevalence in some LA countries was 8.9% in Costa Rica, 14.0% in Colombia, and 22.5% in Ecuador. In the 13- and 14-year-old groups, prevalence was 6.3% in Costa Rica, 10.5% in Peru, 12% in Colombia, and 20% in Ecuador [11, 12]. LA's prevalence values were among the highest in this trial.

In Colombia, the TECCEMA found that in children diagnosed with AD, 47% were diagnosed before age 2, 37% between ages 3 and 5, and 16% after age 5 [13]. The main AD triggers reported by patients were sweat and heat (89%), followed by food allergy (33%) and pet epithelium (22%) [13]. A study in Mexico found that in patients diagnosed with AD before age 18, mild forms of disease were present in 89%, with

moderate manifestations in 8% and severe manifestations in 2% [14]. Some studies have shown AD prevalence is higher in urban areas than in rural areas in Colombia (18.99% [15] versus 6.13% [16], respectively), Ecuador (5.9% and 4.7%, respectively [17]), and Bolivia (9.5% and 8.5%, respectively [18]).

In adults, peak incidence occurs between ages 20 and 40 years, with a prevalence of 9–24% [19]. However, AD research in LA is scarce, and further studies are needed evaluating prevalence and severity in relation to genetic, sociocultural, and environmental factors.

Clinical Practice Guidelines and Diagnosis in LA

Multiple AD guidelines are currently available for the LA region [7, 20], and some countries, such as Colombia [21], Mexico [22], Argentina [23], and Brazil [24], have their own AD guidelines. Most LA guidelines recommend the Williams' criteria for AD diagnosis [21, 22, 25], as these are considered concise and easy to apply in low-complexity clinical contexts [26–28]. However, because some of these criteria do not apply to adults, Hanifin and Rajka's criteria are preferred for assessing AD in this group, because they tend to have more diverse signs and symptoms [29].

In LA countries, especially those located in the tropics, other causes of pruritus and lichenification are common, which can confound and delay AD diagnosis [30–32]. Studies from Brazil and other non-LA tropical countries showed that 50–80% of infectious dermatosis cases, such as scabies, were initially misdiagnosed as AD. Other differential diagnoses of AD include miliaria, papular urticaria, seborrheic and contact dermatitis, ichthyosis, atypical psoriasis, cutaneous T-cell lymphoma, infective dermatitis, and primary immunodeficiencies [33–35]. Because some of these diseases may appear simultaneously, they can further hinder AD diagnosis [36, 37].

After diagnosis, physicians perform additional tests to evaluate triggering factors and severity, especially in moderate-to-severe

disease. These tests should be consistent with the patient's sociocultural context and medical history [7, 21, 22, 25].

Importance of Disease Control

The importance of achieving AD disease control cannot be underestimated in improving outcomes and reducing disease burden. It is a complex task that requires concerted efforts between the patients and physicians, using the correct tools, and rigorous adherence. At present, AD has no cure, and management strategies are focused on symptom improvement, which should be assessed in the most practical and efficient way to guide effective decision-making. Although evaluation tools are available to measure, assess, and classify AD, patients continue to be assessed at physician discretion with non-standardized methodologies, in part because of the lack of practicality, technical knowledge, and time. Physician and patient responsibilities in disease control are outlined in Table 1.

AD control entails assessing risk factors, signs and symptoms, response to treatment, comorbidities, and social, psychological, and physical factors [38]. Limited data have been published on what eczema control means to those living with or treating AD, but severity, QoL, and self-perceptions are crucial to patient evaluation. Adequate clinical control is also key in reducing the physical and psychological comorbidities associated with AD [39]. The most common atopic comorbidities are asthma (15–20%), rhinitis (60–90%), and food allergy (3–15%), and psychological comorbidities include personality disorder (15–30%), anxiety (20–50%), sleep disorders (5–18%), depression (15–23%), attention deficit/hyperactivity (5–20%), and suicide ideation (3–8%) [40–42]. Patients with severe clinical symptoms experience more frequent adverse social and economic effects and deterioration in school and work performance, further underlining the importance of disease control [39].

Table 1 Patient and physician responsibilities in AD control

Physician	Patient
Perform correct diagnosis and disease stratification	Attend medical appointments punctually
Adequately explain AD, highlighting triggers or aggravating factors	Avoid exposure to triggers
Provide education on treatment through oral communications and handouts	Carry out complete recommendations given by physicians and adhere to treatment
Empower patients and caregivers by practicing shared decision-making	Take a proactive role in shared management of disease
Employ AD control assessment tools (both CROM and PROM) in routine clinical practice and treatment decisions	Make appointments in advance for flares, increases, or change in symptoms
Educate patient on the correct use of control assessment tools	Accurately respond to questions and prompts in AD control assessment tools

CROM clinician-reported outcome measures; *PROM* patient-reported outcome measures

AD Control in LA

The scarce information about AD control in LA tends to be similar to that reported in multiple European and North American studies [43]. Therefore, some common aspects can be inferred to explain a lack of clinical control in AD patients: (1) diagnosis and classification errors, (2) treatment non-adherence, (3) lack of effective treatments, (4) economic impact of treatments, and (5) variability of control assessment due to not using clinometric tools. For example, Colombia's TECCEMA study evaluated the

clinical impact of implementing guidelines indicating different AD scales and found high variability depending on the scale used. Furthermore, all control parameters were < 50%, indicating generally poor disease control [13, 44].

Studies in Colombia and Brazil suggest a lower response to topical and systemic treatment in severe disease [44, 45], and other LA studies suggest that comorbidities are linked to increased severity [13, 14, 46]. Control parameters such as QoL, disease persistence, and improvement of physical and mental comorbidities have not been studied adequately in LA.

Measurement Tools

The two types of AD measurement tools available for evaluating AD components are clinician-reported outcome measures (CROMs) and patient-reported outcome measures (PROMs). CROMs are objective clinician evaluations of disease activity and symptoms, whereas PROMs emphasize patient perception of disease, including overall symptoms and/or QoL. Few CROMs can be used in clinical practice for AD assessment, and they do not always correlate well with patient perceptions. Additionally, the short time allotted for each physician-patient consultation often makes applying CROMs difficult.

PROMs complement CROMs and can be used as a tool to provide a more holistic and relevant evaluation of healthcare interventions [47]. These can be collected outside of scheduled office visits, thereby enhancing the understanding of the patient's disease between physician visits. AD's complexity and heterogeneity have led to the development of many measures for its assessment; however, none are considered the gold standard for assessing severity in clinical practice [48]. Studies show that a reliable assessment of AD severity requires applying at least two independent tools concomitantly [49].

CROMs

The most commonly used CROMs that measure disease severity in clinical trials are the SCORing

Atopic Dermatitis (SCORAD) index, the Eczema Area and Severity Index (EASI), and the Investigator's Global Assessment (IGA). These scales primarily are used in clinical trials and less frequently in clinical practice, because they were generally not designed for this purpose [50].

SCORAD Index

The SCORAD index was developed in 1993 by ETFAD and has become the most widely validated disease-severity instrument in clinical trials and practice. It assesses three domains: disease extent using body surface area (BSA), disease activity, and a patient-reported score for pruritus and sleep loss [51]. SCORAD has shown high inter-rater reliability for overall scores and specific clinical features, such as edema, oozing, and lichenification [49–52], and has a high correlation with other objective assessments [50] and QoL measures, such as the Dermatology Life Quality Index (DLQI) [53]. Additionally, the objective SCORAD (oSCORAD) index was introduced to assess only objective symptoms [54].

Some research has shown that SCORAD has limitations related to its complexity. The ETFAD recommends an objective evaluation using the oSCORAD index and the Three-Item Severity (TIS) score, both of which exclude patient perspective [55]. The TIS score is a simple scoring system using three of the intensity items of the SCORAD index (erythema, edema, and excoriations) [49, 56] but is not widely used.

Eczema Area and Severity Index (EASI)

EASI assesses two domains: disease extent in four body regions (head and neck, torso, arms, and legs) and disease severity of four clinical signs (erythema, edema/papulation, excoriations, and lichenification). EASI shows good inter-rater reliability and can be learned easily, allowing clinicians and investigators to quickly standardize a baseline evaluation and assess changes in disease presentation over time [50, 57]. EASI has good correlation with CDLQI and DLQI; however, one of the main limitations is that a low EASI score does not always correlate with worse QoL [58].

Global Assessment Scales

Global assessment scales, including the investigator and physician global assessment (IGA and PGA), are a heterogeneous group of tools that assess clinical AD signs (i.e., erythema, infiltration, papulation, oozing, crusting) [59]. Although IGAs commonly are used to validate other outcome measures [50], many are not validated for this purpose and are difficult to interpret. These scales have notable differences compared with other assessment tools. These do not assess symptoms or QoL and possess a large variability in size, nomenclature, definitions, outcome descriptions, and analysis [60]. However, they remain one of the most employed assessment tools because of the usability in clinical practice and requirements by authorities for drug labeling. Although initiatives to validate global assessments are underway, variability and lack of standardization in these assessments do not produce sufficiently reliable data to inform decision-making and therefore are not optimal for this purpose [60–67].

Other physician assessment tools exist but are not standardized for clinical practice and trials [62]. SCORAD and oSCORAD both have strong correlations with EASI and IGA in adult AD patients. However, none of the indexes show significant advantage over the other [49]. Several organizations have contradicting recommendations on which scales to use during particular scenarios. In clinical trials, the HOME initiative recommends the use of the EASI and SCORAD while the ETFAD recommends using the oSCORAD. Although recommendations are not conclusive regarding which tool to use in clinical practice, all LA guidelines agree that using a clinometric scale is the most important part of any assessment.

PROMs

AD has a significant impact on patient QoL; thus, physicians must not underestimate the importance of patient-perceived symptoms and severity [63, 64]. Although CROMs provide significant objective measures to assess extent and severity, not all include patient perspectives. Key symptoms of AD such as pruritus, sleep

disturbance, and interference with daily activities can be challenging to assess [64]. PROMs are useful in clinical practice because of their ease of use and potential correlations with established objective scales [65].

Atopic Dermatitis Control Tool (ADCT)

The ADCT is a simple, recently introduced patient-reported measurement tool that allows patients to evaluate six AD symptoms and their impact in the previous 7 days: (1) overall severity of symptoms, (2) days with intense episodes of itching, (3) intensity of itching, (4) problems with sleep, (5) impact on daily activities, and (6) impact on mood/emotions. The patient assigns each item a score ranging from 0 (no problem) to 4 (worst effect) [66]. Further validation of the tool was demonstrated by the RELIEVE-AD study in patients > 18 years old with moderate-to-severe symptoms, which shows high correlation with the DLQI [67]. ADCT facilitates patient self-assessment, self-monitoring of disease, and communication improvement between patients and physicians as well as a quick disease assessment. It is cost free and available in Spanish. These attributes make ADCT a tool that provides comprehensive patient-perceived outputs.

Patient-Oriented SCORAD (PO-SCORAD)

PO-SCORAD is a SCORAD derivative that has been adapted for patients to assess disease extent, severity, and symptoms. It is simple, allows quick and easy use by patients and caregivers, and has a significant correlation with the SCORAD index [68, 69].

Patient-Oriented Eczema Measure (POEM)

POEM is a 5-point scale that assesses patient perception regarding the frequency of seven items: (1) dryness, (2) itching, (3) flaking, (4) cracking, (5) sleep disturbance, (6) bleeding, and (7) oozing during the past week [70]. The psychometric properties of POEM show high correlation with objective and QoL measurement tools [64, 70–72].

RECAP of AD (RECAP)

RECAP is designed to evaluate AD control during the previous 7 days and is based on seven characteristics, similar to ADCT: (1) overall symptom severity, (2) days with intense itching episodes, (3) itching bother intensity, (4) sleep disturbance, (5) impact on daily activities, (6) impact on mood/emotions, and (7) disease acceptability. The initial validation demonstrated good correlation with POEM [73].

For clinical trials, the HOME initiative recommends POEM as the preferred instrument to measure patient-reported symptoms [74, 75]. In addition, the initiative recently recognized ADCT and RECAP for long-term disease control measures [76]. In clinical practice, HOME recommended POEM and PO-SCORAD. ADCT is a promising tool for the future but requires further studies for clinical practice use.

Incorporating a Validated Control Assessment Tool

Global data heavily support using assessment tools for AD control, but data specific to LA are lacking. Validated AD control assessment tools allow physicians to obtain information about disease control, treatment response, and patient satisfaction and can help develop optimal management strategies. These tools support a patient-centered approach to care, which emphasizes active patient participation. Any validated tool must be reliable and easy to complete for both patients and physicians.

Using PROMS in LA would create unified data collection in clinical practice and advance an understanding of disease burden, treatment trends, adherence, and AD phenotypes. Furthermore, validated data obtained from PROMS can improve care at the patient level and provide evidence on which to base policy decisions. Finally, these tools contribute to educational material development and help patients self-monitor control and improve treatment [77].

Despite recent efforts to validate certain AD control scales in Colombia [78], CROMs and PROMs largely lack validation for use in LA, and more data are needed. Linguistic variations of Spanish and diverse cultural contexts in LA

require specific validation to ensure accurate transcultural application. Furthermore, practical and simple tools are key to ensure successful adoption given the limited time allotted per patient [79]. The lack of validated CROM and PROM scales in LA is a significant limitation to recommending one specific tool. However, it is clear that implementing CROM and PROM tools concomitantly in routine clinical practice to achieve a holistic evaluation of AD patients is imperative for the region. The statistical properties and characteristics of CROMs and PROMs are outlined in Table 2.

Treatment and Access

LA has a substantial diversity of cultures, sociodemographics, and climates, which present additional challenges to AD management. These factors must be individually evaluated because of their influence on AD onset, triggers, exacerbating factors, and tool application. Adherence to national or regional treatment guidelines is crucial to achieving optimal AD management. First-line management involves educational programs, adequate bathing, trigger avoidance, emollients, topical corticosteroids (TCS), and topical calcineurin inhibitors (TCI). Medication limitations include side effects, high direct costs, differences in coverage rates, and difficulty in adherence. Second-line management is phototherapy with ultraviolet (UV) A and UVB narrowband. Phototherapy generally is not easily accessible in LA, possibly due to limited availability of equipment [80]. Systemic immunosuppressive agents, such as cyclosporine, methotrexate, azathioprine, and mycophenolate mofetil, are third-line management. Some LA countries have limited access to these agents, whose indications are off-label and usually accrue out-of-pocket patient costs [7, 21, 22, 25].

Finally, fourth-line management is dupilumab, a promising biologic agent used in moderate-to-severe AD. Currently, several LA countries have approved dupilumab, mainly for use in adolescents and adults [81–84]. A few countries, like Brazil, have also approved this biologic for children between ages 6 and

Table 2 Statistical properties and characteristics of CROMs and PROMs

	EASI	SCORAD	oSCORAD	PO-SCORAD	ADCT	RECAP	POEM	DLQI	Skindex29
Construction and validation									
Inter-observed evaluation	+	+	+	+	+	+	+	+	//
Intra-observed evaluation	+	+	+	+	+	+	+	+	//
Reliability	+	+	+	+	+	+	+	+	//
Internal validation	+	+	+	+	+	+	+	+	//
Internal consistency	+	+	+	+	+	+	+	+	//
Interpretability	+	+	+	+	+	-	+	+	//
Acceptability	+	+	+	+	+	-	+	+	//
Minimal clinically significant difference	+ /6.6	+ /8.7	+ /8.2	+ /8.2	+ /5	-	+ + /	+ + /	//
External validation	+	+	+	+	+	+	+	+	//
Minimum and maximum score	0-72	0-103	83//	0-103.6	0-24	28	28	3.4	//
Targeted population and applicability									
Age	Any age ⁺	Any age ⁺	Any age ⁺	Any age	> 18 years	Any age ⁺	Any age ⁺	Any age ⁺	//
Current usage	C/T	C/T	C/T	//	T	T	C/T	C/T	//
Spanish translation	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	//
Portuguese translation	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	//
Language validation in Latin America	No	No	No	No	No	No	No	No	//
External validation in LA	No	No	No	No	No	No	No	No	//
Accessibility	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	//

Table 2 continued

	EASI	SCORAD	oSCORAD	PO-SCORAD	ADCT	RECAP	POEM	DLQI	Skindex29
Utility	Yes	Yes	Yes	Yes	Yes	Yes	Yes	//	//
Time to implement	< 10 min*	< 10 min*	< 10 min*	< 10 min*	< 10 min*	< 10 min*	< 10 min*	//	//
Patient perspective	No	Yes	No	Yes	Yes	Yes	Yes	//	//
Easy for physician	Yes*	Yes*	Yes*	No	Yes*	Yes*	Yes*	//	//
Easy for patient	Yes*	Yes*	Yes*	No	Yes*	Yes*	Yes*	//	//
When to implement	B/F	B/F	B/F	B/F	B/F	B/F	B/F	//	//
Time range analyzed	Present	Present	Present	Present	7 days	7 days	7 days	//	//
Strengths	Extent of affected skin	Several domains	Simplicity/ > specificity	Duality (CROM/PROM)	Simplicity	Simplicity	Simplicity		
Limitations	MDA	Complexity*/ < specificity	Purely objective	< acceptability	Only for adults	Not in Spanish or Portuguese	No mood eval		



+ + +: evaluated in at least two centers other than where the scale was constructed. ++: evaluated in one center other than where the scale was constructed. +: evaluated in the same center where the scale was constructed. -: no information. * depends on whether technological tools are available. C/R: clinical practice and trials. B/F: Baseline and follow-up. +: Most of the studies in children > 2 years old. //: additional points for severe disfiguring eczema of the face and hands

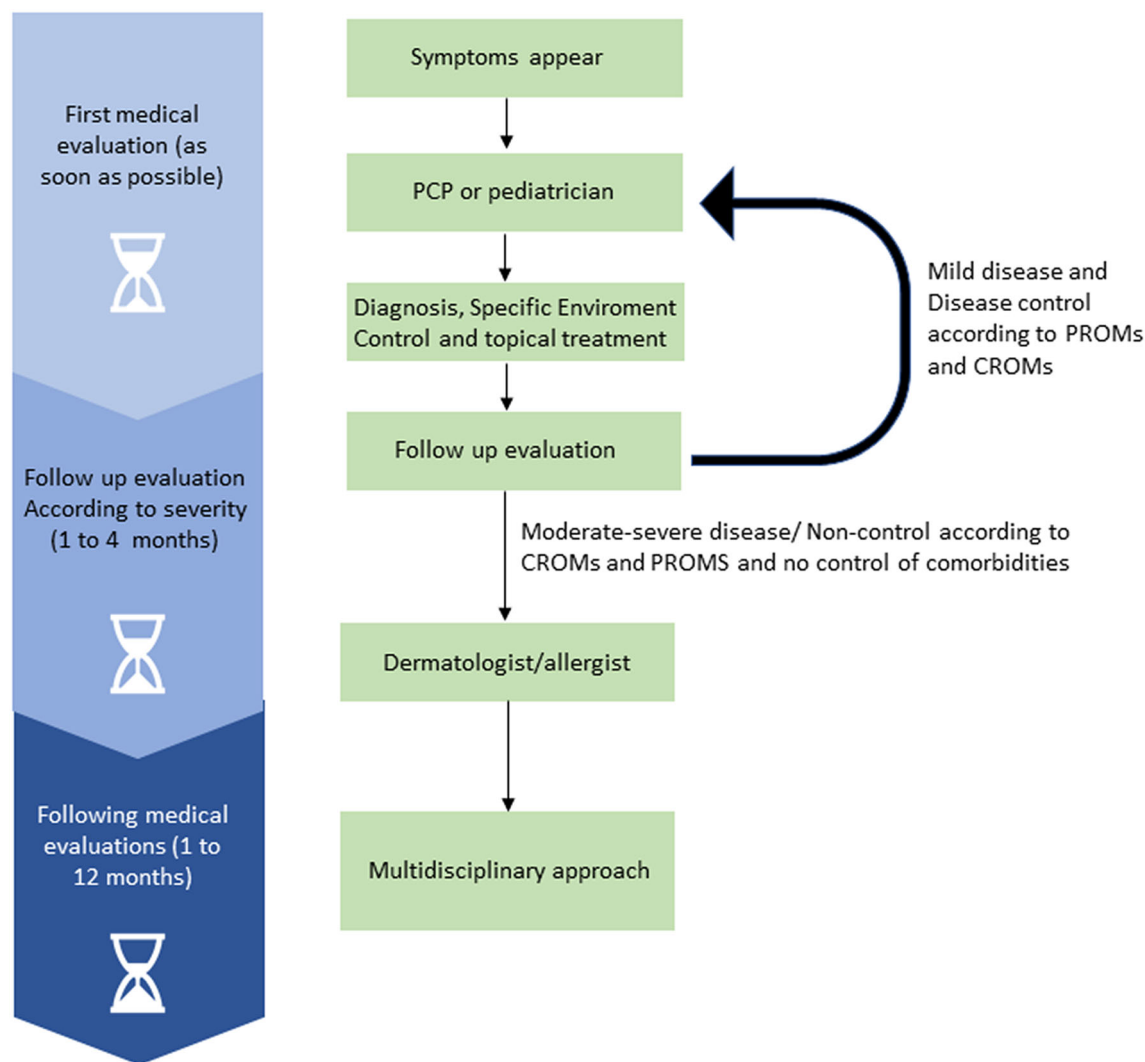


Fig. 1 The ideal AD patient journey

11 years. However, its high direct cost and lack of information among some physicians represent access barriers. Allergen-specific immunotherapy (ASIT) could be used in some highly sensitized patients, but more studies are needed to confirm its efficacy in AD [85, 86].

Treatment decisions, including when to scale therapy up or down, should be based on disease severity and control and continuously evaluated throughout disease course [5]. If the condition does not respond to topical treatment, upscaling to phototherapy or systemic agents is indicated [87]. Although most healthcare

systems require an objective instrument to quantify disease to access high-cost AD medications or treatments, most LA physicians do not use official scores [7, 61]. Figures 1 and 2 and Table 3 below explore the ideal pathway for AD patients in LA, the management that must be followed for disease control, and the reality of what occurs in LA, respectively.

Barriers to AD Control

The authors have identified the following barriers to adopting and standardizing AD control in LA:

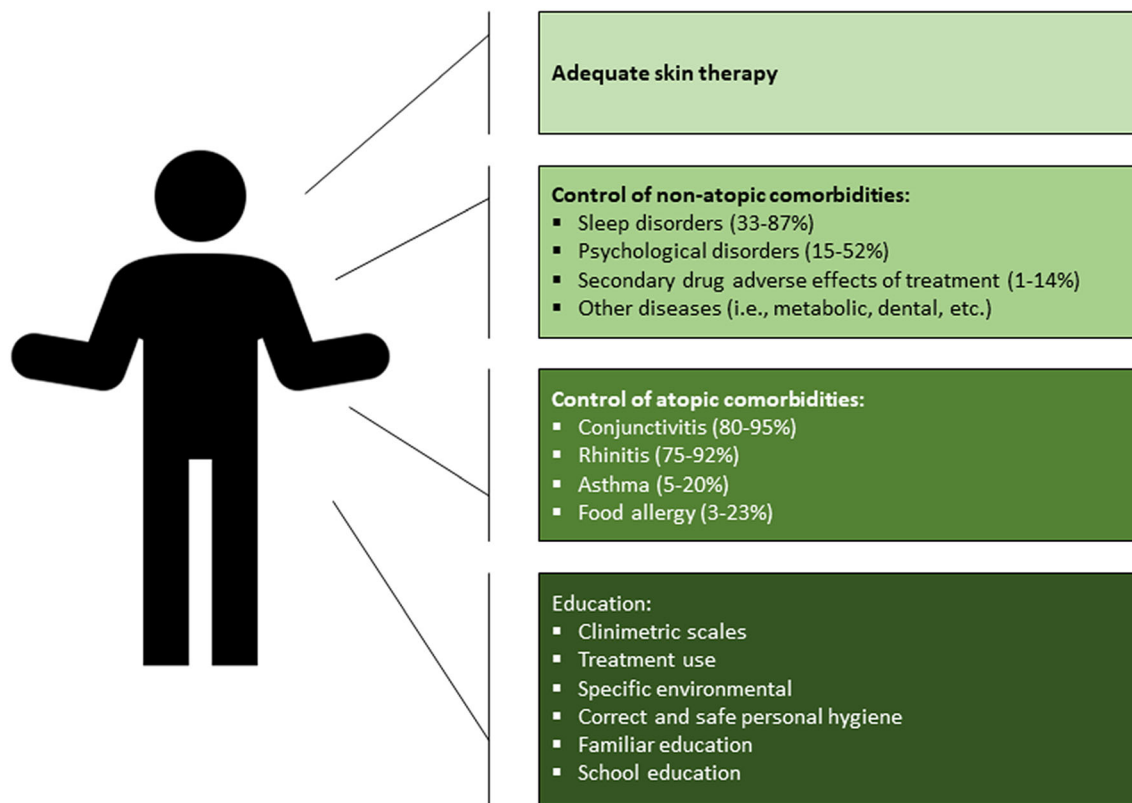


Fig. 2 Disease management for patients with AD

1. Lack of physician education***

In the primary care setting, general physicians, pediatricians, and family doctors lack training for appropriate diagnosis, treatment, and control of AD. Furthermore, primary care physicians (PCPs) must be trained on when they can manage patients and when referral to a specialist is indicated. Even among specialists, continued medical education (CME) is imperative to providing optimal AD care and incorporating validated assessment tools. In a recent publication, only 30% of LA physicians surveyed use Cochrane, UpToDate, and other medical information sources [88].

2. Low use of validated AD control assessment tools

Before initiating AD treatment, most guidelines recommend measuring AD severity by a validated control assessment tool, such as EASI or SCORAD [21, 22, 25]. Although regional and international guidelines provide clear stepwise

approaches to treatment guided by these scores, some studies show that only 30–50% of dermatologists and allergists employ them in routine clinical practice [14].

3. Lack of patient education

Comprehensive patient education on disease, skin care, treatment application, and behavioral modifications for patients and caregivers is critical to successful management. However, the time that physicians have with patients is insufficient to provide comprehensive education [89]. AD patient education programs can have a significantly positive effect in disease outcomes [90–92]. Patient education programs should aim to dissipate misconceptions about treatment options and raise awareness on the value of control assessment tools [93]. Information and communication technology (ICT) is a powerful tool that can be leveraged in LA to provide medical information to healthcare providers and patients and promote validated

Table 3 The ideal patient pathway versus the reality of patients in LA

	Ideally (according to most guidelines)	Real life (in many AD patients)
First medical evaluation	As soon as possible	Sometimes years
Second medical evaluation	According to severity	According to insurance availability or economic capacity
Diagnosis	As soon as possible using Dx criteria	Sometimes years, without clear Dx criteria
Specific environmental control	Specific recommendations according to individual environment	In some patients, they are never carried out, and in others, recommendations are often unnecessary
Tropical therapies	Individually selected	Selected according to insurance or economic capacity
Severity score	Done in each medical evaluation	In most cases, it is omitted
QoL index	Done in each medical evaluation	In most cases, it is omitted
Patient perspective	Done in each medical evaluation	In most cases, it is omitted
Allergic comorbidities	Always handled according to each case	In most cases, it is omitted (time, lack of knowledge, etc.)
Non-allergic comorbidities	Always handled according to each case	In most cases, it is omitted (time, lack of knowledge, etc.)
Following medical evaluations	According to medical criteria	According to insurance availability or economic capacity
Atopic dermatitis specialist	As soon as the need is identified	According to insurance availability or economic capacity, sometimes may be years

tools for AD severity and control [88, 94, 95]. The COVID-19 pandemic has dramatically increased the use of ICT for the management of dermatologic patients [96].

4. Fragmented care

AD is not limited to the skin, and each patient must receive holistic medical control. In LA, AD care is fragmented, presenting challenges to ideal contemporary management that involves multidisciplinary teams focused on prevention, emotional support, and disease and comorbidity control. Collaborative and coordinated efforts must exist between the treating physician and those treating individual comorbidities.

5. 5. lack of national clinical practice guidelines (CPGs)

Few LA countries have national AD CPGs, resulting in unstandardized diagnostic criteria, workups, control evaluations, and treatment strategies. AD management needs may diverge among countries because of differences in access to medical care, socioeconomic circumstances, and cultural beliefs. Patients, physicians, and health systems would therefore benefit from national guidelines that can be translated to real-life clinical settings adapted to each national context [97, 98]. Incorporating all stakeholders' perspectives, including dermatology, allergology, pediatric, and primary care

medical societies, as well as patient advocacy groups, government institutions, and payers, in guideline development is essential to give academic relevance to knowledge dispersion regarding AD control.

6. Limited access to care

Disparities in therapy access, especially interventions such as phototherapy and biologic therapy, exist between LA’s private and public health systems. In LA, access to AD treatments varies by country.

CONCLUSION

In LA, AD patients face many challenges. The high cost of disease management ranges from maintenance measures to high direct-cost biologics and non-biologic drugs, which can be exacerbated in countries with limited resources, inefficient and limited health systems, and scarce access to drugs and specialists. AD

assessment tools may provide a way forward and allow for shared decision-making, patient empowerment, and standardized care. To overcome barriers and improve knowledge dissemination, all stakeholders, including government institutions, academic centers, industry, NGOs, patient associations, medical societies, and payers, must align. The panel proposes the following recommendations:

Develop Continued Medical Education (CME) programs (Fig. 3): use validated AD control assessment tools in routine clinical practice

- Physicians must:
 - Incorporate AD control assessment tools in routine clinical practice and be consistent in using the same tools for the same patient.
 - Use CROMs and PROMs concomitantly for reliable assessments [49].

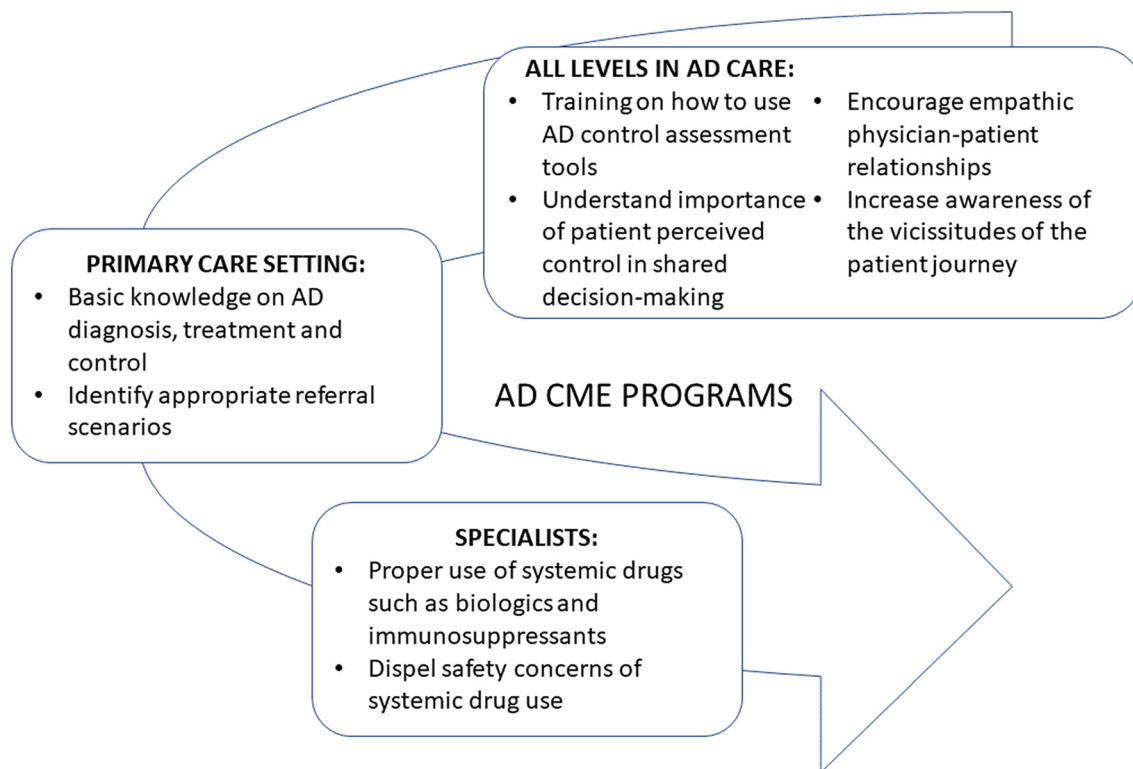


Fig. 3 AD CME programs at different levels of care

- Medical societies, academic institutions, and governments should collaborate to validate AD control assessment tools for LA.

Develop patient education programs

- These provide comprehensive information on disease activity, preventive measures, treatment, and control strategies through oral communication and patient educational material. Information must be reinforced at each consult.
- Train patients on using control assessment tools and feeling empowered in their role.
- Programs must be adapted to educational levels and cultural contexts [21].
- Patient education must be considered an integral part of management and be covered by health systems.

Multidisciplinary Care Approach

- Ensure a multidisciplinary approach for AD patients with a team of PCPs, dermatologists, allergists, psychiatrists, psychologists, pediatricians, nurses, and nutritionists focused on delivering comprehensive care.
- Enable an individualized strategy that addresses comorbidities [99].

Develop National CPGs

- All countries should develop local guidelines adapted to their national reality. If this is not possible in the short to medium term, each country's leading medical societies should reach consensus on which guideline physicians should adopt.

Increase Access to AD Therapy

- Governments must increase coverage of basic and advanced AD therapies for both public and private systems supported by cost-effectivity analyses.

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