Original Research

ASSESSMENT OF ATOPIC DERMATITIS PREVALENCE IN CHILDREN AGED 6 MONTHS TO 12 YEARS

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ABSTRACT

Background: Atopic dermatitis (AD) is a chronic, recurrent, inflammatory, scaly disease, which is sometimes persistent and is one of the most common dermatological diseases among children. This has increased significantly within the past several decades, and has resulted in a convoluted assortment of links among genetic disposition, epidermal barrier dysfunction, immune malregulation, microbiome modification, food sensitisation and environmental triggers. Early diagnosis and proper management in primary health-care units are necessary in terms of minimization of symptom burden, prevention of complications and enhancement of the quality of life.
Duration and Place of Study: Primary Health Care Corporation Doha, Qatar from March 2025 to March 2026
Objective: The study aimed to determine the prevalence, demographic and treatment trends of atopic dermatitis amongst children with primary health-care clinics between the ages of 6 months and 12 years old.
Methodology: Electronic medical records of paediatric patients, with at least one visit to the dermatology clinic, and diagnosed with atopic dermatitis, were reviewed in a cross-sectional review. Data that was extracted covered age, sex distribution, frequency of AD diagnoses and typically prescribed therapeutic interventions.
Results: Among 1000 children (500 males, 500 females) who presented themselves at the dermatology clinics, 300 were diagnosed with atopic dermatitis and this provided a prevalence of 30. The average age of the affected kids was 5.1±3.5 years, ranging from 6 months to 12 years. The age-group distribution showed that 19% were below 1 year, 41% were between 1-5 years of age, 19% were between 5-8 years old and 21% were between 8-12 years old. There was a slight prevalence of AD in boys, 155(31%), than in girls, 145(29%). Patterns of treatment were that topical emollients were recommended in about 90% of cases, oral antihistamines (~80%), and antibiotics (~55%). Topical corticosteroids were used on only about 70(7%) cases and this suggests a strict treatment approach towards steroid therapy.
Conclusions: The existing study shows that the prevalence of atopic dermatitis is extremely high in children who attend primary health-care centres, particularly among the younger children. The findings highlight the essence of enhanced awareness, early diagnosis, and routine management procedures in primary care. Further efforts to improve treatment pathways standardisation and further training of caregivers can help in reducing the burden of disease and improving long-term outcomes in children with the disease.

Keywords: Atopic Dermatitis, Prevalence, Children, Primary Care, Paediatric Dermatology.

INTRODUCTION

Atopic dermatitis (AD or eczema) is a long-term, recurrent inflammatory skin condition in children, and one of the most prevalent paediatric dermatologic diseases in the world. It is typified by pruritus, xerosis and eczematous lesions with a characteristic age-dependent distribution. AD usually starts at an early age, with 60% of the cases being detected in the first year of life and 85% in the first five years [1].

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The global occurrence of AD has risen significantly over the last few decades, especially in the industrialised and fast urbanising areas, indicating that environmental and lifestyle elements contribute greatly to the manifestation of the disease [2,3]. This trend has elevated AD to a significant health issue of concern as it is a chronic disease affecting the quality of life and healthcare utilisation.

AD is a multifactorial condition and a complex mixture of genetic predisposition, impaired epidermal barrier and immune dysregulation and environmental factors. One of the strongest known genetic risk factors of AD is mutations in the filaggrin (FLG) gene that result in the impairment of the skin barrier integrity and is associated with the onset of the disease earlier in life and severe expression [4]. Those pathways that result in inflammation, pruritus and susceptibility to

cutaneous infections are T-helper 2 (Th2) cytokines, specifically, IL-4 and IL-13 [5]. The skin microbiome also plays a critical part; Staphylococcus aureus colonisation is widespread in AD, as well as associated with disease flares and impaired barrier functioning and heightened inflammatory responses [6]. Other environmental factors, such as allergenicity, irritants, climatic factors, pollution and psychosocial stress, are other factors that control the disease activity and play a part in the observed increase in prevalence [7,8].

Other atopic diseases, such as asthma, allergic rhinitis and food allergies, which constitute the so-called atopic march, are also commonly related to AD [9]. The comorbidities have a strong correlation with early-onset AD, particularly in severe cases, and early diagnosis and the best management is important. Physically symptomatic, AD can be long-term pruritus, sleep disturbance and skin lesions which may be apparent, have a significant effect on emotional status, behaviour and social functioning in children and also contribute to caregiver stress and reduced family quality of life [10].

The primary health-care facilities play a crucial role as far as the issue of early diagnosis, detection and treatment of AD are concerned. The majority of AD children are first diagnosed in the primary care environment, where the clinicians have to differentiate AD and other skin conditions, initiate treatment and educate about long-term skin maintenance. Emollients will continue to be the main treatment option and will be targeted at healing the skin barrier and decreasing the frequency of exacerbations [11]. Topical corticosteroids are normally used when there are acute exacerbations and the use of antihistamines, antibiotics and other adjunctive therapy can be given depending on the nature of the symptoms and complications [12]. Although evidence-based guidelines are available, the treatment practices in primary care significantly differ among various settings, based on the experience of clinicians, the parental worry about steroid use, and disparities in access to healthcare [13].

Information about the commonality and clinical manifestations of AD in the primary health-care settings is significant to improve the service planning, resource distribution, and development of standardised management pathways. The epidemiological data of primary care also offers a great concept of age-related trends, sex distribution, and treatment trends, which might be unlike those of hospital-based surveys or community surveys. Moreover, it is particularly crucial that the burden of AD can be detected in younger children as the disease can be more chronic and closely linked with allergic comorbidities when it is identified at an early age [14].

Even though several international researchers have reported the prevalence of AD in paediatric populations, the prevalence has been extremely inconsistent, with a range of between 10 and above and this is dependent on the study design, diagnostic criteria and population characteristics [15]. Such variability supports the importance of context-specific data to gain more insights about the disease patterns and guide clinical practice. The prevalence estimates in the primary care conditions where the majority of children with AD are addressed can be utilized to identify the areas of failure in the treatment, areas of opportunity in the early intervention, and assist in developing special educational programmes for families and healthcare providers.

Considering the increasing rates of atopic dermatitis worldwide and its huge burden on children and their families, this research will seek to measure the prevalence of AD, demographic and treatment patterns of AD amongst children aged 6 months to 12 years of age in the primary health-care clinics. The research will help improve clinical decision-making, management approaches, and long-term outcomes of paediatric patients with atopic dermatitis because it will present in-depth epidemiological data.

METHODOLOGY

This research was a cross-sectional retrospective design that utilized routinely collected clinical data that were retrieved by using electronic medical records. All paediatric patients aged between 6 months and 12 years who attended primary health-care dermatology clinics were screened for eligibility. All 1000 children were found to have at least one visit to a dermatology clinic during the study period. Out of these, 300(30%) children were diagnosed with a confirmed diagnosis of atopic dermatitis by physician documentation and were included in the final analysis. Children under the age of 6 months and above 12 years were not included and cases with missing diagnostic data were not included. The sampling method employed was a non-probability, since all the eligible cases that fit the inclusion criteria could be directly picked out of the electronic system.

The data were extracted using the standardised retrieval process to ensure that they were accurate and complete. The data included demographic information (age, sex and locality) and the clinical information (the presenting symptoms, the history of allergies, the number of visits to the clinic, the prescribed medications, etc.). Age was used both as a continuous and categorised into four groups. Among the 300 children with atopic dermatitis, 57 (19%) were younger than 1 year, 123 (41%) were aged 1–5 years, 58 (19%) were aged 5–8 years, and 62 (21%) were aged 8–12 years. The sex distribution was that 155 (31) out of the total atopic dermatitis cases were boys and 145 (29) girls, which means that there was a slight prevalence in male children.

Locality has been divided into local and non-local, with 110 (37) of the samples being local and 190 (63) non-local.

Clinical variables such as the existence of general symptoms such as pruritus, xerosis, erythema and eczematous lesions were present. History of comorbid allergic diseases was also taken, such as asthma, allergic rhinitis and food allergies. Of the 300 children with atopic dermatitis, 72 (24) had a history of asthma, 66 (22) had allergic rhinitis and 39 (13) had food allergies. These comorbidities were coded as binary variables according to the physician's record. The prescription data were gathered through prescription records and all treatments were captured in the medication data. Most frequently, topical emollients were prescribed, and 270 (90%) of children were treated with them. An attitude characterized by conservativeness about the use of steroids was exhibited in the proportion of oral antihistamines (240, 80%), antibiotics (165, 55%), the use of topical corticosteroids (21, 7%).

All personal identifiers were also deleted before analysis to maintain confidentiality and adhere to data protection laws. Patients were allocated a study code that was unique to each and no identifiable information was stored in the form of names, identification numbers, or contact details. The data was archived in a secure location and only authorised research team members could access it. All the processes were in line with the policies of institutional data governance, and the data extracted were only used in research.

SPSS version 26 was used to perform statistical analysis. Demographic and clinical characteristics were summarised using descriptive statistics. Continuous variables, including age and number of visits, were summarised as mean and standard deviation, whereas the categorical variables, including age groups, sex, locality, comorbidities and medication types, were summarised by using frequencies and percentages. Prevalence of atopic dermatitis was determined as the percentage of children with the disease amongst all the children who visited the paediatric dermatology clinic. Further descriptive statistics were performed to investigate the age and sex distribution of cases. Medication use patterns were also characterized to bring an idea about the treatment practices in primary care settings. There were no inferential statistical tests, because the main aim of the study was to be descriptive.

RESULTS

1000 children between 6 months and 12 years attended the dermatology clinics in the study period. Out of them, 300 (30%) children were diagnosed with atopic dermatitis and they were analyzed. The mean age of AD children was 5.1±3.5 years and the age group was between 6 months and 12 years. Age distribution showed that 57 (19%) children were younger than 1 year, 123 (41%) were aged 1–5 years, 58 (19%) were aged 5–8 years, and 62 (21%) were aged 8–12 years.

The distribution of the number of AD cases by gender indicated a slightly higher percentage of boys, 155(31%), and 154(29%) girls, respectively. Distribution of locality showed that 110 (37%) cases of AD were of local children and 190 (63%) non-local. The average number of dermatology visits of the AD patients was 1.4±0.9, where the minimum was 1 visit and the maximum was 8 visits.

Comorbid allergic disorders were also evaluated. Of the 300 AD cases, 72 (24%) were reported to have a history of asthma, 66 (22%) had allergic rhinitis, and 39 (13%) had food allergies. These results point out the fact that approximately a third of children with AD had at least one atopic condition.

Table 1. Sociodemographic and Clinical Characteristics of Children with Atopic Dermatitis (N = 300)

Variables	N	%
Age (years)		
<1 year	57	19%
1–5 years	123	41%
5–8 years	58	19%
8–12 years	62	21%
Gender		
Male	155	31%
Female	145	29%
Locality		
Local	110	37%
Non-local	190	63%
Comorbidities		
Asthma	72	24%
Allergic rhinitis	66	22%
Food allergy	39	13%
Number of visits	Mean = 1.4 ± 0.9	—

The total incidence of atopic dermatitis among all patients in the dermatology clinic was 30%. The highest prevalence was in infants of less than 1 year of age (57 out of 137 infants; 41.6%), and children aged 8-12 years (62 out of 189; 32.8%). The highest prevalence was in children aged 1-5 years at 29.3, with the lowest prevalence in 5-8 years.

There was also a gender-specific prevalence of AD, with boys (155; 31%) having higher prevalence rates than girls (145; 29%). Local children had a higher prevalence (110 out of 320; 34.3%) compared to non-local children (190 out of 680; 28.0%).

Table 2. Prevalence of Atopic Dermatitis by Age, Gender, and Locality

Variables	AD Cases (N)	Prevalence (%)
Age (years)		
<1 year	57	41.6%
1–5 years	123	29.3%
5–8 years	58	23.0%
8–12 years	62	32.8%
Gender		
Male	94	31%
Female	87	29%
Locality		
Local	110	34.3%
Non-local	190	28.0%

Patterns of medication were also analysed. Topical emollients were the most common form of treatment, with 270 (90%) children receiving them. The most common prescriptions were oral antihistamines (240, 80%), antibiotics (165, 55%), and topical corticosteroids (21, 7%). Keratolytics (12; 4%), topical anti-infectives (7; 2.3%), antiseptics (3; 1%), and antiviral agents (3; 1%) were the least frequently prescribed treatments.

Table 3. Medications Prescribed to Children with Atopic Dermatitis (N = 300)

Medication Category	N	%
Emollients	270	90%
Antihistamines	240	80%
Antibiotics	165	55%
Topical corticosteroids	21	7%
Keratolytics	12	4%
Topical anti-infectives	7	2.3%
Antiseptics	3	1%
Antivirals	3	1%

In general, the findings indicate that the burden of atopic dermatitis among children visiting dermatology primary health-care clinics is significant, and there are significant age, gender, and national differences. Medication history shows a high level of use of emollients and antihistamines but low use of topical corticosteroids.

DISCUSSION

The current paper shows that atopic dermatitis (AD) is an important clinical problem in children presenting to primary health-care dermatology clinics, with an incidence rate of 30, which is in line with the highest end of the international estimates. The high percentage of affected children and especially among the younger ages, is consistent with the early development of AD, which is well established and also with the results of various studies conducted in different countries.

The prevalence in this study is similar to the findings of the International Study of Asthma and Allergies in Childhood (ISAAC), which found AD prevalence rates ranging from 20 to 30% in various regions around the world [16]. This is also more or less true in a large cohort study that was conducted in the United Kingdom, which reported a prevalence of 27% in children below 12 years, which is similar to the prevalence of 30% here [17]. Conversely, Scandinavian countries have recorded a bit lower rate of 15-22%, which could be explained by variations in environmental exposures and genetic makeup [18].

The age distribution in the current study is age-specific, with the majority of the infections being in infants (<1 year), which is similar to the results of a German birth cohort in which early infancy exhibited the largest incidence of AD [19]. The pattern was also found in our population, with a Japanese study showing almost 40% of cases of AD

in children under one year of age [20]. Our research with a low rate in the age group of 5-8-year-olds is also in line with the natural history of AD, whereby some children improve their symptoms with age.

Gender variations in the prevalence of AD have been well reported and many studies have indicated gender differences whereby boys tend to have a slightly higher prevalence during early childhood. Our experience of more boys (31%) than girls (29%) is consistent with a survey of the Korean population, which also reported male dominance in the younger age groups [21]. Nevertheless, other studies, such as a study done in Sweden, showed that there were no significant gender differences and hence sex-related patterns could differ across populations [22].

It might be the case that the greater prevalence of the local children compared to non-local children in this study is due to dissimilarities in environmental exposures and lifestyles or healthcare-seeking behaviour. The same trends can be noted in the Middle Eastern studies, where the local population tends to have higher levels of allergic diseases than expatriate populations [23]. On the other hand, a Singaporean study reported that non-local children were more likely to have AD, and the interplay between the environment and genetics is complicated [24].

The comorbid allergic conditions were prevalent in our cohort, with asthma (24%), and allergic rhinitis (22%), being prevalent in AD. These results are in line with the so-called atopic march in which AD often goes before other allergic illnesses. According to a longitudinal study conducted in Denmark, there was a threefold risk of children with early developmental AD to develop asthma and allergic rhinitis later in childhood [25]. Equivalent correlations were also observed in a cohort study in the United States, where 30% of children having AD developed asthma at the age of 6 years [26].

The trends in medication use were characterized by a significant dependence on emollients (90%) and antihistamines (80%), whereas topical corticosteroids were not used extensively (7%). This pattern of prescribing steroids conservatively could represent the parental fears of the safety of steroids, which is widely reported in the literature. An Australian study reported that over 60% of parents were steroid phobic, which resulted in the underuse of topical corticosteroids in the presence of clinical necessity [27]. By comparison, European studies have shown an increased prevalence of corticosteroid use, usually over 40, which is an indicator of variation in clinical practice recommendations and beliefs of caregivers [28].

The comparatively high antibiotic use (55%) in our cohort can be explained by the secondary bacterial infections, especially Staphylococcus aureus, which has been known to colonise AD lesions. A Dutch study showed that over 50% of AD children needed at least one course of antibiotics, which is consistent with this trend [29]. Guidelines are, however, becoming more focused on prudent antibiotic use, which implies that antimicrobial stewardship needs to be better in the primary care facilities.

Overall, the findings of the present study can be aligned with the global trends and, nevertheless, they indicate some demographic and clinical trends that can be used in primary health-care populations. The elevated rates, early onset, and comorbidity rates require early diagnosis, education of the caregivers, and standardized care pathways. Future research should focus on longitudinal outcomes, severe disease risk factors, and interventions on primary care.

CONCLUSION

The current article highlights a huge burden of atopic dermatitis among children in the primary health-care dermatology clinics, where it was reported to have a prevalence of 30, with the highest prevalence rates recorded in infants who are less than a year old. The findings uphold the prematurity and chronicity of the condition and its close association with other atopic conditions, such as asthma and allergic rhinitis. The prevalence of it was marginally higher in boys and the local children, as in other international studies. Treatment was predominantly based on emollients and antihistamines, but the use of topical corticosteroids was low, indicating limited prescribing practices and issues with caregivers. On the whole, the findings highlight the importance of an early diagnosis, regular management plans, and improved education of caregivers in primary care. Improving standardised treatment pathways may also lead to the reduced burden of disease and improved long-term outcomes in children with the disease.

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