IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 21, Issue 3 Ser.9 (March. 2022), PP 31-35
www.iosrjournals.org

Atopic Dermatitis in Children Attending A Dermatology Clinic In Southern Nigeria.

Otike-Odibi B[1], Azubogu U[2]
[*]*Correspondence: branduju@yahoo.com*
[1]*Dermatology unit, Department of Internal Medicine, University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt*
[2]*Department of Paediatrics, University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt.*

Background: *Atopic dermatitis (AD) is the most common chronic relapsing skin disease in children. It affects 10-20% of children worldwide and commonly occurs in families with a history of asthma, allergic rhinitis, and food allergies. The study aimed to determine the prevalence and clinical profile of atopic dermatitis in children attending the dermatology clinic in UPTH, Port Harcourt.*
Materials and Methods: *A retrospective review of the case notes of all children diagnosed with atopic dermatitis over a three (3) year period was done.*
Results: *Among the 486 children seen in the dermatology clinic over the study period, 69 (14.2%) were diagnosed with atopic dermatitis. There were 31 (45%) males and 38 (55%) females; M: F=1:1.2. The mean age of the study subjects was 6.5±5.7 years. Fifty-four (78%) had a positive family history of atopy. The majority of patients (81%) were diagnosed by five years of age. The most common clinical features were pruritus (96%) and macular rash (88%). The most commonly affected sites were the cubital fossa (77%), and popliteal fossa. AD was significantly more common in children aged five years and below. However, no association was found between gender and the diagnosis of AD.*
Conclusion: *Atopic dermatitis is a common inflammatory skin disease posing a significant burden on the patient's quality of life and healthcare resources. Prompt diagnosis and treatment will help to limit morbidity associated with the condition.*
Keywords: ***Atopic dermatitis, Children, Dermatology clinic, Nigeria***

Date of Submission: 12-03-2022 Date of Acceptance: 27-03-2022

I. Introduction

Atopic dermatitis (AD) is the most common chronic relapsing skin disease in children.[1] It affects 10-30% of children worldwide and commonly occurs in families with a history of asthma, allergic rhinitis, and food allergies. It is a complex disease characterized by an interplay between genetic predisposition and dysfunctional epidermal barrier in response to environmental agents.[2] This results in defective skin barrier, reduced skin innate immune response, and exaggerated T-cell response to environmental allergens and microbes.[1] The hallmark of AD is chronic skin inflammation. These lead to the clinical features seen which include xerosis, pruritus, rash, erythema, etc. These features place a significant burden on the well-being and quality of life of affected children.[2] Furthermore, it places a great financial strain on the families of affected children and healthcare resources.[2]

AD shows a slight male preponderance with the onset of symptoms typically occurring in infancy.[3] Pruritus and cutaneous reactivity are the cardinal features reported in affected patients.[1,3] The prevalence of AD varies in different parts of the world. It occurs with a higher frequency in industrialized and high-income countries than in the low-income, agriculture-based ones.[4,5] This frequency however has been reported to still be on the increase, especially in low-income countries.[3] A study done in Spain[6] reported a prevalence of 15.5% among the children evaluated. In Bangladesh, Pedersen *et al*, [7] reported a prevalence rate of 11.9% in a study done among rural children while a prevalence rate of 10.7% has been reported in the United States of America.[8] Studies done in different parts of Africa have estimated the prevalence of AD to range from 5.7%%-60.1%.[9-11] In Nigeria, the prevalence ranges from 4.1%-20%.[12-15]

It is imperative to identify children with AD early and initiate interventions to limit morbidity. This is important as AD can adversely impact the quality of life of affected children.[15,16] Also, children with AD are at increased risk of skin and systemic infections. These infections arise from a combination of multiple factors which include cutaneous dysbiosis, skin barrier defects, type 2 inflammation, and Staphylococcus aureus colonization. [17-20] Various therapies are available for the control of AD.[1,21] These therapies include emollients,

antihistamines, corticosteroids, phototherapy, immunomodulatory and biological agents as well as lifestyle modification.[1]

II. Materials And Methods

Study Design

This was a retrospective cross-sectional study of children diagnosed to have Atopic Dermatitis at the Dermatology clinic in UPTH over a three (3) year period

Study Area

The study was conducted in the Dermatology Clinic of the University of Port Harcourt Teaching Hospital, Port Harcourt in Southern Nigeria.

Study Population

This consisted of children under 18 years of age seen in the Dermatology clinic of UPTH within the period under review.

Methods

The case files of the children seen in the clinic within the period under review were retrieved and a data entry form was used to document relevant information concerning socio-demographic characteristics, clinical symptoms, and signs as well as family history of atopy. Clinical symptoms sought for were duration of symptoms/ age at onset of symptoms, types of symptoms present, and body areas affected. The diagnoses of dermatological disorders were done by trained dermatologists. Diagnoses were mainly clinical but relevant laboratory confirmation was obtained when necessary.

Statistical Analysis

Data were analyzed using SPSS version 25.0. Results were presented as tables and charts in simple proportions. Chi-square test was used to test the association between categorical variables Statistical significance was at 95% confidence interval with p-value <0.05.

III. Results

Among the 486 children seen in the dermatology clinic within the period under review, 69 were diagnosed with atopic dermatitis giving a prevalence of 14.2%. Figure 1 shows that among the study participants, 31 (45%) were males while 38 (55%) were females giving a Male: Female ratio of 1:1.2. The mean age of the study subjects was 6.5±5.7 years. Table I shows that the diagnosis of AD was most prevalent in the 1-5 years age group (53.6%) and the majority of affected children had a family history of atopy (78%). The most common clinical features were pruritus (96%) and rash (88.4%). The most commonly affected body parts were the cubital fossa (76.8%) and the popliteal fossa (63.8%).

Table II shows that gender was not significantly associated with the diagnosis of AD. Table III shows that AD was significantly more prevalent in children aged five years and below in comparison to those above five years.

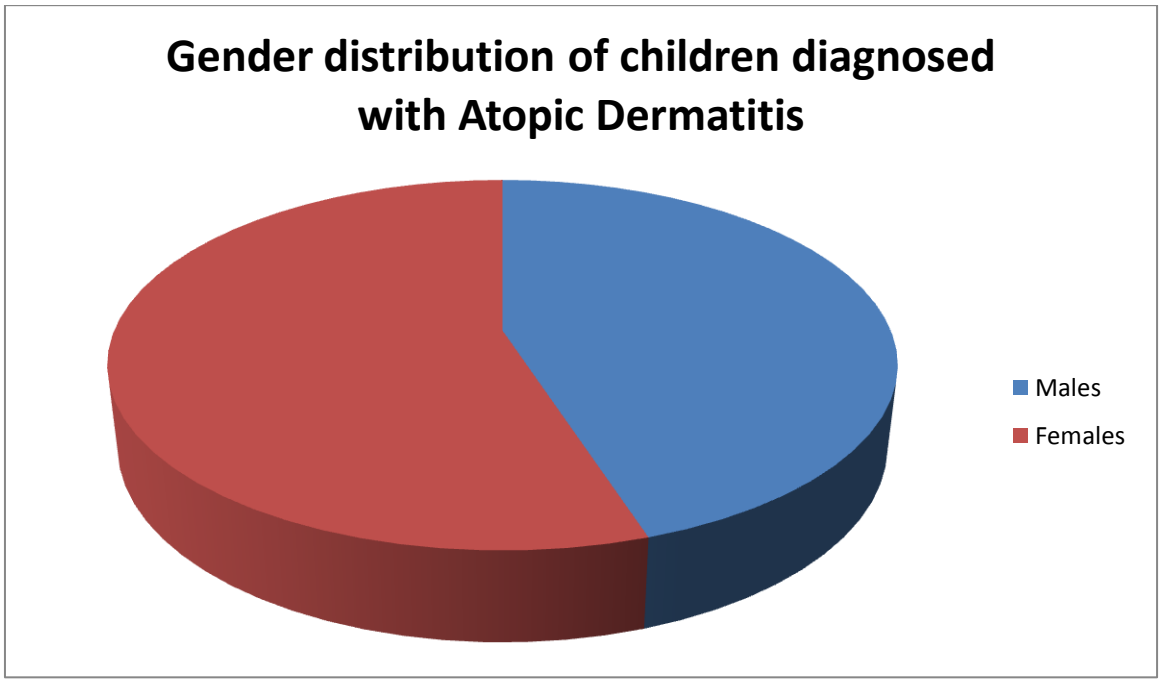

Figure 1: Gender distribution of children with Atopic Dermatitis

Table I: Characteristics of Participants diagnosed with Atopic Dermatitis.

Variables	Frequency (N=69)	Total (%)
Age (years)		
<1	19	27.5
1-5	37	53.6
6-10	9	13.0
>10	4	5.9
Sex		
Male	31	45.0
Female	38	55.0
Family history of Atopy		
Yes	54	78.0
No	15	22.0
Duration of Symptoms (months)		
<6	20	29.0
6-12	33	47.8
>12	16	23.2
***Symptoms/signs present**		
Pruritus	66	96.0
Rash	61	88.4
Xerosis	45	65.2
Hyperpigmentation	42	60.9
Erythema	37	53.6
***Area of the body affected**		
Cubital fossa	53	76.8
Popliteal fossa	44	63.8
Axilla	42	60.9
Face	15	21.7

***Multiple responses were noted**

Table 11: Relationship between Gender and diagnosis of Atopic Dermatitis

Variable	Diagnosis of Atopic Dermatitis		
	Yes n=69	No n=417	Total N=486
Gender			
Female	38(14.7)	220(85.3)	258(100.0)
Male	31(13.6)	197(86.4)	228(100.0)

χ^2=0.127, p-value=0.721

Table III: Relationship between Age and diagnosis of Atopic Dermatitis

Variable	Diagnosis of Atopic Dermatitis		
	Yes n=69	No n=417	Total N=486
Age at onset (years)			
≤5	56 (18.2)	251 (81.8)	307 (100.0)
>5	13 (7.3)	166 (92.7)	179 (100.0)

χ^2=10.3043, p-value= .001

IV. Discussion

The prevalence of AD in this study compares favorably with that reported in previous studies.[6,14] It is however higher than the finding reported by Henshaw et al,[12] in Nigeria. This may be attributable to the fact that the study in comparison was conducted in adolescent children. Furthermore, our finding is lower than the 60.1% reported by Katibi et,[11] in a South African study. This disparity may be because their study was conducted in a more industrialized clime which has been reported to have a higher burden of AD than the less industrialized regions.

The majority of the children in our study had a family history of atopy. This is similar to the findings from previous studies.[9,22,23] This supports the report of a genetic predisposition to AD as found in several works of literature. Among the children in our study, the most commonly affected body area was the cubital fossa. This is in contrast to the findings in the study done by Nnoruka in which the most affected area was the elbow.[22] Furthermore, our study found pruritus as the leading clinical symptom among patients with AD. This differs from the finding reported by Nnoruka in which xerosis was the predominant clinical feature reported.[22] This difference in clinical presentation may be attributable to the fact that the study by Nnoruka involved both children and adults with AD.

Concerning factors associated with the occurrence of AD, our study found no association between gender and AD. This differs from the findings in previous studies in which a female preponderance was noted in the occurrence of AD. [6,9] Also, our findings differ from that reported by Kelbore in which a male preponderance was found in the occurrence of AD.[10] The reason for these differences is unclear. With regards to age, our study found AD to be most prevalent in children aged five years and below. This is comparable to that reported by Sendrasao et al,[9] in Madagascar. Our finding in this regard is expected as AD is known to have its onset in infancy and early childhood.

V. Conclusion

Atopic dermatitis is a common inflammatory skin disease posing a significant burden on the patient's quality of life and healthcare resources. The prevalence among children in our practice is high (14.2%) and occurred more predominantly in children aged five years and below. Prompt diagnosis and treatment will help to limit morbidity associated with this condition.

References

[1]. Leung DYM, Sicherer SH. Atopic Dermatitis (Atopic Eczema). In Kliegman RM, St. Geme JW, Blum NJ, Shah SS, Tasker RC, Wilson KM, Behrman RE (eds.) Nelson Textbook of Pediatrics. 21st ed. Philadelphia: Elsevier; 2020. 1209-1216.
[2]. Nutten S. Atopic Dermatitis; Global Epidemiology and Risk Factors. Ann Nutr Metab 2015, 66(suppl 1:8-16.
[3]. Dhar S. Atopic Dermatitis. In Color Atlas and synopsis of Pediatric Dermatology. 3rd ed. New Delhi: Jaypee Brothers Medical Publishers,2015. 146-148.
[4]. Bagazgoitia L, Gutierrez M, Garcia BCHernandez MA, Torrelo A. Epidemiologic, pathogenic, clinical and diagnostic aspects of atopic dermatitis. Is it possible the prevention? Rev Pediatr Aten Primaria 2009; 11:31-47
[5]. Odhiambo JA, Williams HC, Clayton TO, Robertson CF, Asher MI. ISAAC Phase Three Study Group Global variations in prevalence of eczema symptoms in children from ISAAC Phase Three. J Allergy Clin Immunol 2009;124:1251.e23-1258.e23

[6]. Gilaberte Y, Perez-Gilaberte JB, Poblador-Plou B, Bliek-Bueno K, Gimeno-Miguel A, Prados-Torres A. Prevalence and Comorbidity of Atopic Dermatitis in children: A Large-Scale Population study based on real-World Data. J Clin Med 2020;9(6):1632.
[7]. Pedersen CJ, Uddin MJ, Saha SK, Darmstadt GL. Prevalence and Psychosocial impact of atopic dermatitis in Bangladeshi children and families. PLoS ONE 2021; 16(4):e0249824.
[8]. Avena-Woods C. Overview of Atopic Dermatitis In Supplements and Featured Publications, Atopic Dermatitis: Focusing on the patient care strategy in the Managed Care Setting, Volume 23, Issue 8.
[9]. Sendrasao FA, Ranaivo IM, Razanakoto NH. Epidemiology and associated factors of atopic dermatitis in Malagasy children .s Allergy Asthma Clin Immunol 2020; 16(4):1-5
[10]. Kelbore AG, Owih P, Reid AJ, Bogino EA, Wonderwosen L, Dessu BK. Pattern of skin diseases in children attending dermatology clinic in a Referral Hospital in Wolaita Sodo, Southern Ethiopia. BMC Dermatology 2019, 19;5-9.
[11]. Katibi OS, Dlova NC, Chateau AV, Mosam A. The prevalence of paediatric skin conditions at a dermatology clinic in KwaZulu-Natal Province over a 3 month period. S Afr J Child Health 2016; 10(2):121-25.
[12]. Henshaw E, Olasode O, Ogedegbe E, Etuk I. Dermatological conditions in teenage adolescents in Nigeria. adolescent Health, Medicine and Therapeutics 2014; 5:79-87.
[13]. Oninla OA, Oninla SO, Onayemi O, Olasode OA. Pattern of Paediatric Dermatosis at dermatology clinics in Ile-Ife and Ilesha, Nigeria. Pediatr. and Int. Child H. 2016; 36 (2): 106-12.
[14]. Ayanlowo O, Puddicombe O, Gold-Olufadi S. Pattern of skin diseases amongst children attending a dermatology clinic in Lagos Nigeria. Pan Afr Med J. 2018; 29:162.
[15]. Puddicombe OT, Odusote OA, Lesi FEA, Ayanlowo AO. Impact of atopic dermatitis on the quality of life of Nigerian children: A hospital-based cross-sectional study. SEARCH 2018;12(6):137-142.
[16]. Kouassi YI, Ahogo KC, Bia OF, Kouassi KA, Kourouma HS, Allou AS et al. Assessment of the Quality of life of African Black Children with Atopic Dermatitis by the CDLQ1 Score. Portuguese Journal of Dermatology 2021; 79(1):33-36.
[17]. Wang V , Bugoniewicz J, Bugoniewicz M, Ong PY. The infectious complications of atopic dermatitis. Ann Allergy Asthma Immunol 2021;126(1):3-12.
[18]. Wang V, Keefer M, Ong PY. Antibiotic choice and methicillin-resistant Staphylococcus aureus rate in children hospitalized for atopic dermatitis. Ann Allergy Asthma Immunol 2019;122(3):314-317.
[19]. Rippke F, Schreiner V, Doering T, Maibach HI. Stratum corneum Ph in atopic dermatitis: impact on skin barrier function and colonization with Staphylococcus aureus. Am J Clin Dermatol 2004;5(4):217-223.
[20]. Kim J, Kim BE, Ahn K, Leung DYM. Interactions between atopic dermatitis and Staphylococcus aureus infection: clinical implications. Allergy Asthma Immunol Res. 2019;11(5):593-603.
[21]. Adedoyin OT, Abdulkadir MB. Allergic disorders in children. In Azubuike J, Nkanginieme JE (eds) . Paediatrics and child health in a Tropical Region. 3rd Edition. Lagos: Educational Printing and Publishing;2016. 397-399.
[22]. Nnoruka EN. Current epidemiology of atopic dermatitis in south-eastern Nigeria. Int J Dermatol 2004; 43(10):739-44.
[23]. Wadondo-Kabondo S, Stern JA, Golding J, Kennedy CT, Archer CB, Dunnil MG et al. Association of parental eczema, hayfever and asthma with atopic dermatitis in infancy: birth cohort study. Arch Dis Childhood 2004,89:917-21.

Otike-Odibi B, et. al. "Atopic Dermatitis in Children Attending A Dermatology Clinic In Southern Nigeria." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 21(03), 2022, pp. 31-35.