

ORIGINAL RESEARCH

Evaluation of cases of atopic dermatitis

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ABSTRACT

Background: Chronic inflammatory skin condition with a complicated origin is atopic dermatitis (AD). The present study was conducted to assess cases of atopic dermatitis.

Materials & Methods: 106 children age ranged 8-12 years of AD of both genders was selected. Parameters such as weight status, delivery method, first-year antibiotic use, breastfeeding, asthma history, and rhinitis history were recorded. The international study of asthma and allergy in childhood (ISAAC) questionnaire was used.

Results: Out of 106 patients, boys were 66 and females were 40. 62 were overweight and 44 were underweight. 68 were born by caesarean section and 38 by normal vaginal delivery. 70 had history of asthma, 36 had not. 72 had history of allergic rhinitis and 34 had not. 85 had antibiotic use in first year of life and 21 had not. 64 had breastfeeding >4 months and 42 had not. The difference was significant (P< 0.05).

Conclusion: AD's rising frequency and severity place a heavy social and financial strain on individuals, families, and societies. Maximum patients had history of asthma, history of allergic rhinitis and had antibiotic use in first year of life.

Key words: Atopic dermatitis, antibiotic use, caesarean section.

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Introduction

Dermatitis derives from the Greek "derma" which means skin, and "itis," which means inflammation. Chronic inflammatory skin condition with a complicated origin is atopic dermatitis (AD). Although AD is largely understood to be a childhood disease, mounting evidence points to a higher prevalence of AD in adults than previously believed. Only a few previous research looked at the prevalence of AD in adults; the majority concentrated on the prevalence of AD in children.¹ Up to 95% of people with atopic dermatitis begin experiencing symptoms before the age of five, and about 50% begin experiencing symptoms during the first year of life.² A spontaneous remission occurs in around 75% of cases of eczema with childhood beginnings before puberty; the remaining 25% either have eczema throughout adulthood or experience a return of symptoms after a period of symptom-free years. Hand

eczema is a common primary feature of adult-onset atopic dermatitis or adult-onset atopic dermatitis that recurs. An epidemiological analysis of the prevalence and risk factors of AD is required in order to develop a societal response to these issues.³ The pathophysiology of AD is complex and involves T-cell driven inflammation, epidermal dysfunction, and genetic predisposition, and AD is associated with increased risk of multiple comorbidities, including asthma, allergic rhinitis, and food allergy.⁴ Comorbidities also extend well beyond atopic conditions to include other skin diseases, bowel, joint, and cardiovascular abnormalities. There are important differences in the characteristics of AD among different ethnicities from various geographical regions and age groups, which may impact upon how AD is diagnosed.⁵ The present study was conducted to assess cases of atopic dermatitis.

Materials & Methods

The present study was conducted on 106 children age ranged 8-12 years of AD of both genders. Parents were informed and their consent was obtained. Data such as name, age, gender etc. was recorded. A complete investigation was conducted. Weight status, delivery method, first-year antibiotic use, bronchiolitis before the age of two, birth weight, older siblings,

younger siblings, breastfeeding, the introduction of solid food, asthma history, and rhinitis history were among the details that were logged. The international study of asthma and allergy in childhood (ISAAC) questionnaire was modified for this investigation. Results thus obtained were assessed statistically. P value less than 0.05 was considered significant.

Results:

Table I: Distribution of patients

| Total- 106 | | |
|------------|------|-------|
| Gender | Boys | Girls |
| Number | 66 | 40 |

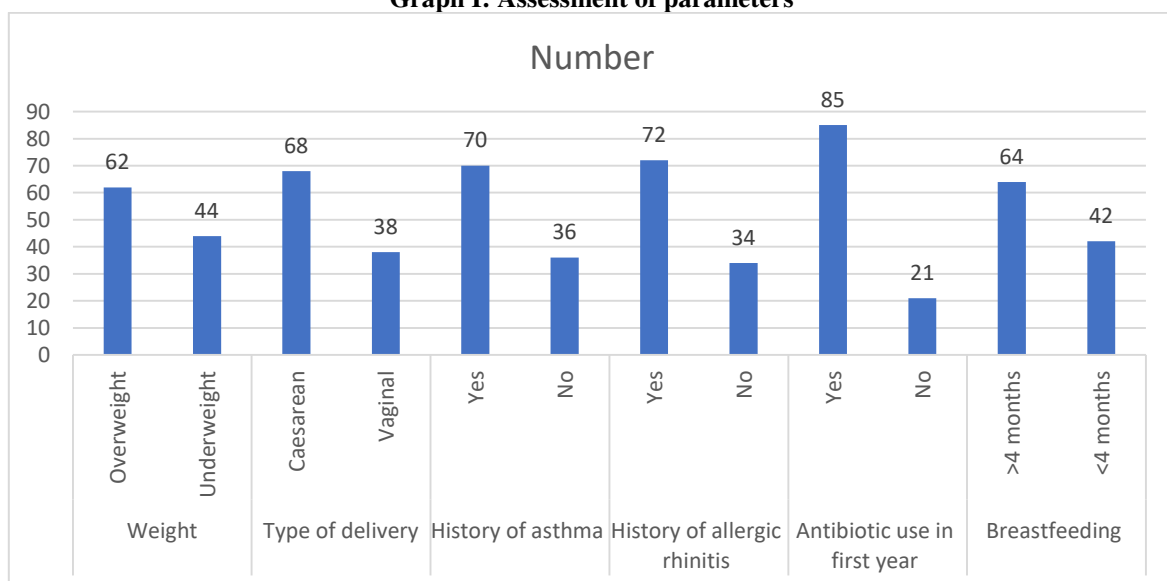
Table I shows that out of 106 patients, boys were 66 and females were 40.

Table II: Assessment of parameters

| Parameters | Variables | Number | P value |
|------------------------------|-------------|--------|---------|
| Weight | Overweight | 62 | 0.01 |
| | Underweight | 44 | |
| Type of delivery | Caesarean | 68 | 0.07 |
| | Vaginal | 38 | |
| History of asthma | Yes | 70 | 0.012 |
| | No | 36 | |
| History of allergic rhinitis | Yes | 72 | 0.01 |
| | No | 34 | |
| Antibiotic use in first year | Yes | 85 | |
| | No | 21 | |
| Breastfeeding | >4 months | 64 | 0.05 |
| | <4 months | 42 | |

Table II, graph I shows that 62 were overweight and 44 were underweight. 68 were born by caesarean section and 38 by normal vaginal delivery, 70 had history of asthma, 36 had not, 72 had history of allergic rhinitis and 34 had not. 85 had antibiotic use in first year of life and 21 had not, 64 had breastfeeding >4 months and 42 had not. The difference was significant ($P < 0.05$).

Graph I: Assessment of parameters



Discussion

Atopic dermatitis (AD) is one of the most common chronic inflammatory systemic diseases requiring long-term management, such as frequent application of emollients, topical medications and a close follow-up by healthcare professionals, which may have negative consequences on the mental health of patients with AD.⁶ It is estimated that up to 30% of patients whose AD was diagnosed during childhood will have persistent disease throughout adulthood.⁷ A minority of patients will also develop AD as adults. Around 50–75% of all children with early-onset atopic dermatitis are sensitized to one or more allergens, such as food allergens, house dust mites, or pets, whereas those with late-onset atopic dermatitis are less often sensitized.⁸ However, intake of foods or exposure to airborne allergens is rarely the cause of exacerbations in atopic dermatitis; many patients with the disease are sensitized to foods without this playing a role in eczema activity.⁹ Atopic dermatitis, particularly severe disease, in a child heralds other atopic diseases. A child with moderate to severe atopic dermatitis may have as much as 50% risk of developing asthma and 75% risk of developing hay fever.¹⁰ The present study was conducted to assess cases of atopic dermatitis. We found that out of 106 patients, boys were 66 and females were 40. Ho et al¹¹ investigated 6,453 pre-schoolers from 59 kindergartens and 14 day care facilities in order to determine the prevalence, severity, and risk factors for atopic dermatitis. Dermatological examination-based prevalence of atopic dermatitis was lower (9.2% vs. 19.1%) than questionnaire-based prevalence. According to the EASI score, the majority of patients (96.2%) had moderate atopic dermatitis. However, 56.7% of people had not completely recovered from their rash over the previous 12 months, and 17.4% had sleep disturbances. "Changing the patient's house to a newly built house during the first year of life" exhibited a significant odds ratio among the 12 risk factors. We observed that 62 were overweight and 44 were underweight, 68 were born by caesarean section and 38 by normal vaginal delivery, 70 had history of asthma, 36 had not, 72 had history of allergic rhinitis and 34 had not. 85 had antibiotic use in first year of life and 21 had not, 64 had breastfeeding >4 months and 42 had not. Parental sadness and stress, parenting conflict and relationship satisfaction, household income, and self-efficacy with managing challenging child behavior and child behavior problems were all examined by Mitchell et al.¹² Each of these factors and the application of inadequate parenting techniques were related. The severity of atopic dermatitis was correlated with a greater usage of inadequate parenting techniques. The use of ineffective parenting techniques was uniquely predicted by family income alone using multiple linear regressions, while child behavior and household income together explained unique variance in self-efficacy for handling

challenging child behavior. The ability to control atopic dermatitis and the ability to control problematic child behavior are positively correlated, and less permissive and more authoritarian parenting styles are associated with successful self-reported management of atopic dermatitis tasks. Aversive child behavior that was seen up close. Upendra et al¹³ determined the clinico-epidemiological features of atopic dermatitis in South Chhattisgarh residential school students. Boys made up 1:1.73 of the 90 children with atopic dermatitis. The average age at sickness beginning was 2.14 0.52 years, and the average illness duration was 1.71 0.38 years. 34 (37.8%) of the children had a personal history of atopy, whereas 47 (52.2%) of the children had a familial history. The most frequent form of clinical presentation (n = 56, 62.2%) was chronic, which was followed by subacute (n = 24, 26.2%), and acute (n = 10, 11.1%). The most often affected region was the flexor (n = 42, 46.7%), followed by the extensor and face (n = 24, 26.7% each). 76 (84.4%) children were found to have mild severity, followed by 12 (12.4%) children with moderate severity, and severe (n = 2, 2.2%) children. Sweating (n = 53, 58.9%) was the most common aggravating factor followed by seasonal (n = 51, 56.7%), wool (n = 24, 26.7%), stress (n = 15, 16.7%), dust (n = 10, 11.1%), physical exercise (n = 8, 8.9%), and food (n = 2, 2.2%).

The limitation of the study is small sample size.

Conclusion

Authors found that AD's rising frequency and severity place a heavy social and financial strain on individuals, families, and societies. Maximum patients had history of asthma, history of allergic rhinitis and had antibiotic use in first year of life.

References

- Olesen AB, Bang K, Juul S, Thestrup-Pedersen K. Stable incidence of atopic dermatitis among children in Denmark during the 1990s. *Acta Derm Venereol* 2005; 85: 244–247.
- Schultz Larsen F, Svensson A, Diepgen TL, From E. The occurrence of atopic dermatitis in Greenland. *Acta Derm Venereol* 2005; 85: 140–143.
- Saeki H, Iizuka H, Mori Y, Akasaka T, Takagi H, Kitajima Y, et al. Prevalence of atopic dermatitis in Japanese elementary schoolchildren. *Br J Dermatol* 2005; 152: 110–114.
- Saeki H, Oiso N, Honma M, Odajima H, Iizuka H, Kawada A, et al. Comparison of prevalence of atopic dermatitis in Japanese elementary schoolchildren between 2001/2002 and 2007/2008. *J Dermatol* 2009; 36: 512–514.
- Haile amlak A, Lewis SA, Britton J, Venn AJ, Wold emariam D, Hubbard R, et al. Validation of the international study of asthma and allergies in children (ISAAC) and U.K. criteria for atopic eczema in Ethiopian children. *Br J Dermatol* 2005; 152: 735–741.
- Jee HM, Kim KW, Kim CS, Sohn MH, Shin DC, Kim KE. Prevalence of asthma, rhinitis and eczema in Korean children using the International Study of

- Asthma and Allergies in Childhood (ISSAC) Questionnaires. *Pediatr Allergy Respir Dis (Korea)* 2009; 19: 165–172. 7
7. Grize L, Gassner M, Wüthrich B, Bringolf-Isler B, Takken Sahli K, Sennhauser FH, et al. Trends in prevalence of asthma, allergic rhinitis and atopic dermatitis in 5–7-years old Swiss children from 1992 to 2001. *Allergy* 2006; 61: 556–562.
 8. Williams H, Robertson C, Stewart A, Ait-Khaled N, Anabwani G, Anderson R, et al. Worldwide variations in the prevalence of symptoms of atopic eczema in the international study of asthma and allergies in childhood. *J Allergy Clin Immunol* 1999; 103: 125–138.
 9. Hanifin JM, Thurston M, Omoto M, Cherill R, Tofte SJ, Graeber M. The eczema area and severity index (EASI): assessment of reliability in atopic dermatitis. EASI Evaluator Group. *Exp Dermatol* 2001; 10: 11–18.
 10. Falade AG, Olawuyi JF, Osinusi K, Onadeko BO. Prevalence and severity of symptoms of asthma, allergic rhino conjunctivitis, and atopic eczema in 6- to 7-year-old Nigerian primary school children: the International Study of Asthma and Allergies in Childhood. *Med Princ Pract* 2004; 13: 20–25
 11. Ho CL, Chang LI, Wu WF. The prevalence and risk factors of atopic dermatitis in 6–8 years old first graders in Taipei. *Pediatrics & Neonatology*. 2019 Apr 1;60(2):166-71.
 12. Mitchell AE, Fraser JA, Morawska A, Ramsbotham J, Yates P. Parenting and childhood atopic dermatitis: A cross-sectional study of relationships between parenting behaviour, skin care management, and disease severity in young children. *International Journal of Nursing Studies*. 2016 Dec 1;64:72-85.
 13. Upendra Y, Keswani N, Sendur S, Pallava A. The clinico-epidemiological profile of atopic dermatitis in residential school children: A study from South Chhattisgarh, India. *Indian Journal of Paediatric Dermatology*. 2017 Oct 1;18(4):281-5.