

Characteristic of Atopic Dermatitis in Polyclinic Dermatology Siloam Hospital Bali

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Abstract

Backgrounds: Atopic dermatitis (AD) is a type of dermatitis (eczema) that occurs due to skin inflammation. This condition can be accompanied by red, dry, and cracked skin. Inflammation usually lasts a long time, even years. The epidemiology of AD worldwide ranges from 5–20% in children and 1–3% in adults. Morbidity varies greatly in each country due to the influence of the environment as a risk factor. The prevalence of atopic dermatitis in developed countries has been reported to have decreased, while in developing countries, it is increasing.

Aim: knowing the characteristics of AD at Siloam Hospital Bali in the period January 1, 2021 – to December 31, 2021

Method: This study used a descriptive method with a retrospective cross-sectional approach. The sample used was 60 taken from the total population of DA January 1, 2021 – to December 31, 2021 based on secondary data from medical records in the form of patient age, gender, location of skin disorders, history of atopy, and therapy and then processed by descriptive statistics.

Results: From the results of this study, it is known that the age group is 12-18 years old 24 (40%), female sex 42 (70%), flexor location 20 (33.3%), with the most atopy history 35 (58.3%) and topical corticosteroid therapy 45 (75%).

Conclusion: AD In Siloam hospital having characteristic data the most of aged 12-18 years and female sex. The location of most lesions is in the flexor area. The treatment given depends on the age, phase of the disease, and the most of topical corticosteroids choice to treatment.

Keywords: atopic dermatitis (AD), characteristics, skin inflammation

1. Introduction

Atopic dermatitis is a characteristic inflammatory skin disease, chronic resistive, characterized by intense itching and frequent recurrence. Generally often occurs in infancy, and childhood can continue into adulthood. Skin disorders in itching, erythema, edema, blisters, and sores in the acute stage, marked lichenification in the chronic stage. This disease is often associated with elevated serum IgE and atopic history in patients themselves or their families, such as allergic rhinitis, bronchial asthma, and allergic conjunctivitis (Mulick et al., 2018; Siegels et al., 2021).

The epidemiology of atopic dermatitis (AD) worldwide ranges from 5-20% in children and 1-3% in adults. Morbidity varies greatly in each country due to the influence of the environment as a risk factor. The prevalence of atopic dermatitis in developed countries has been reported to have decreased, while in developing countries, it is increasing. This condition is likely due to increased urbanization, pollution, and obesity. The International Study of Asthma and Allergies in Childhood (ISAAC) states that AD in adolescents aged 13-14 years in African countries reaches 12-14% and in Latin America 6-10%. While in the countries of the Asia Pacific region, the Eastern Mediterranean, and the Indian subcontinent, it is lower, around 3–6% (Lee et al., 2019; Torres et al., 2019)

An approximately 2–3-fold increase in incidence in recent decades has been found in industrialized countries. Atopic dermatitis in children is about 2% in Iran and China but reaches about 20% in Australia, the UK, and Scandinavia. In addition, several studies have shown that immigrants from developing countries living in developed countries have a higher incidence of AD than the original population (Drucker et al., 2020)

In the first two years of life, atopic dermatitis has also increased, as much as 7–27% in Asia Pacific countries, including South Korea, China, Singapore, Malaysia, and Taiwan. The highest incidence of AD occurs in children, with 85% appearing in the first year of life and 95% appearing before five years. In Indonesia, the prevalence of AD has increased every year. Research by Soegiarto et al., in 2019, reported that the morbidity of allergic diseases in school children in metropolitan cities in Indonesia has the same pattern as other developing countries. The study involved 499 children and adolescents from schools and universities in 5 cities. It was reported that 278 subjects had at least one allergic disease manifestation, of which the AD cases were 1.8 %. Urticaria and allergic rhinitis is the most common atopic disease, with a positive atopic family history of 60.79% (Soegiarto et al., 2019; Sutanto et al., 2020). This study is to determine the characteristics of AD at Siloam Hospital Bali in the period January 1, 2021 – to December 31, 2021

2. Method

This study used a descriptive method with a retrospective cross-sectional approach. The sample used was 60 taken from the total population of AD January 1, 2021 – to December 31, 2021 based on secondary data from medical records in the form

of patient age, gender, location of skin disorders, disease phase, and therapy and then processed by descriptive statistics. The inclusion criteria in this study were complete medical record data and AD diagnosis by a dermatologist at Siloam hospital Bali. Exclusion criteria were incomplete medical record data and the presence of not only AD.

3. Result

The study results of 60 patients suspected of being diagnosed with atopic dermatitis were assessed based on major and minor criteria based on Hanifin and Rajka . The characteristics of the data can be seen in table 1.

Table 1 Characteristics of AD patients at Siloam Hospital

Variable		n	%
Age (years)	0-6	13	21.7
	7-12	15	25
	12-18	24	40
	>18	8	13.3
Gender	Man	18	30
	Woman	42	70
Location of skin disorders	Face	8	13.3
	Flexor	20	33.3
	Extensor	6	10
	2 locations	14	23.3
	≥ 3 locations	12	20
History of Atopy	Exist	35	58.3
	There is not any	25	41.6
Therapy	Topical Corticosteroids	45	75
	Systemic Corticosteroids	12	20
	Antihistamines	40	66.7
	Topical antibiotics	22	36.7
	Systemic Antibiotics	7	11.7
	Polytherapy	8	13.3
	Moisturizer	32	53.3
	NaCl Compress	5	8.3

From the results of this study, it is known that the age group is 12-18 years old 24 (40%), female sex 42 (70%), flexor location 20 (33.3%), with the most atopy history 35 (58.3 %) and topical corticosteroid therapy 45 (75%) being the most disaggregated by all choice therapy.

4. Discussion

In this study, from January 1, 2021 – to December 31, 2021, it was found that 60 subjects were obtained. Based on the age division according to clinical stage, the most cases were found in the 12-18 year age group 24 (40%) patients. The results in this study differ from the theory that atopic dermatitis can occur at any age but is more common in infants and children (Brunner et al., 2018). In this study, in patients with atopic dermatitis, as many as 42 (70%) were female patients. The results of this study follow the literature theory that the gender ratio is reported to be more common in women with a ratio of 1.3: 1 (Vakharia and Silverberg, 2019). In this study, as many as 35 (58.3%) patients have a history of atopy. This follows the theory and previous research that more patients with atopic dermatitis have a history of atopy. In this study, the location of the most lesions was found in the flexors as many as 20 (33.3%) patients and followed by the extensor section as many as 6 (10%) patients and the face as many as 8 (13.3%) patients. Symptoms in infants usually start on the face and spread mainly to the extensor areas. Lesions continue in children and adults, especially in the folds and hands (Yew et al., 2019).

Management of atopic dermatitis aims to reduce itching improving skin conditions, infection and inflammation. A systematic and multifactorial approach is needed, combining skin hydration, pharmacological therapy, and eliminating causative factors. Most of the treatments given in this study were topical corticosteroids for 45 (75%) patients. Topical corticosteroid therapy is effective for atopic dermatitis as anti-inflammatory, anti-proliferative, and has an immunosuppressive action. In addition, topical corticosteroids are relatively fast, well-tolerated, easy to use, and not as expensive as other

alternative therapies (Torres et al., 2019; Vakharia and Silverberg, 2019).

This study gave systemic corticosteroids to 12 (20%) patients. Systemic corticosteroids should be used in acute exacerbations, only short-term, intermittent and sustained. Long-term use is not recommended in children. No true trials are evaluating this therapy according to the Helsinki protocol. Systemic antihistamines that are usually used are Mebhidrolin napadisilat which is a first-generation H1 blocker antihistamine; although first-generation antihistamines do not directly reduce itching and treat chronic urticaria, the results are not good, these effects help improve the quality of sleep of patients. In addition, CTM 4mg tab can also be given, which is a first-generation antihistamine and second-generation H1 blocker antihistamines such as cetirizine and loratadine. This second-generation has no sedative effect but is very well tolerated because it can be given in high doses to relieve allergy symptoms throughout the day and can be used to treat chronic urticaria (Siegel et al., 2021).

S. aureus colonization is found in more than 90% of the skin of patients with atopic dermatitis as a result of impaired skin barrier function and innate immunity. If there is a secondary infection by *S. aureus* (maisans, crusts, pustules, pus), systemic antibiotics can be given, whereas if the lesions are not extensive, topical antibiotics can be given. The most systemic antibiotics were 7 (11,7%) in this study. The most topical antibiotics given were gentamicin sulfate 0.1% cream as many as 22 (33.7%) patients. Gentamicin has been widely used in dermatology since 1960. Patients with atopic dermatitis, the sensitivity to gentamicin was 99.7%. Fusidic acid is reported to have advantages over other anti-bacterials (Min et al., 2022)

There are several combinations of antibiotics and topical corticosteroids as combination therapy in patients with atopic dermatitis. According to studies, the best combination is a topical corticosteroid with fusidic acid. A study showed that short-term use of a combination of topical corticosteroids with fusidic acid did not increase resistance. A new formulation of the combination of betamethasone valerate with fusidic acid in a fat cream may also treat xerosis in atopic dermatitis. Management of patients with atopic dermatitis is very important in moisturizer. Moisturizer is highly recommended to be used before using topical corticosteroids (Siegel et al., 2021).

This study gave moisturizers to 32 (53.3%) patients. This is following the literature that in the skin of patients with atopic dermatitis, there is an increase in transepidermal water loss so that the skin barrier becomes damaged, which causes the skin to become dry. The use of moisturizers in patients with atopic dermatitis can improve the barrier function of the stratum corneum and reduce the need for topical steroids (Mulick et al., 2018).

In acute wet lesions, compressing is generally applied before applying a topical medication. Compressing techniques are also used to accelerate wound healing. NaCl compresses were only given to 5 (8.3%) patients in this study (Egeberg et al., 2020; Mulick et al., 2018; Yew et al., 2019). As written in the research method, this type of research is a retrospective descriptive study with a cross-sectional design. The drawback of this study is that it only uses secondary data obtained from medical records. Not all medical records have the expected complete data. In addition, it isn't easy to see follow-up therapy success in this study

5. Conclusion

Patients with a history of atopy as many as 60 subjects from January 1 to December 31, 2021, at Siloam Hospital Bali have a characteristic distribution of the incidence of atopic dermatitis in female patients more than men. The distribution of the incidence of atopic dermatitis according to age was highest at the age of 12-18 years. The distribution of the locations of atopic dermatitis was mostly in the flexor area. The most common management of atopic dermatitis is topical corticosteroids.

Competing interest

No competing interests were disclosed.

Conflict of interest

The authors declare no conflict of interest, financial or otherwise.

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