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Clinical profiles and management of atopic dermatitis in adult patients: A retrospective study

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Abstract---Atopic dermatitis (AD) is a chronic inflammatory skin disease, characterized by the appearance of redness, rash and itching. The prevalence in adults was around 1-3%. Due to the chronic and relapse, in general there has been no satisfactory management of AD. This was a Retrospective study in new adult atopic dermatitis patients in Dr. Soetomo General Academic Hospital Surabaya. The data were collected from medical records. Out of 243 adult AD patient there were 167 female patients (68.7%) and 76 male patients (31.3%). The largest age group was in the group of 20-34 years old with a total of 137 patients (56.4%). The most precipitating factor in AD was food with a total of 91 patients (37.4%). The most given oral therapy was antihistamines with a total of 168 patients (69.1%) and the most widely administered topical therapy was moisturizer with a total of 147 patients (60.5%).

Keywords---atopic dermatitis, adult, management.

Introduction

Atopic dermatitis (AD) is a chronic inflammatory skin disease, characterized by the appearance of redness, rash and itching. Atopic dermatitis is a global public health problem, with a prevalence in children of 10-20% and in adults around 1-3% (Simpson et al., 2019). Atopic dermatitis generally occurs in childhood, but in some cases it can begin in adulthood. AD in adults consists of two types, the first type is AD that appears in childhood and develops into an adult condition or is called as persistent AD, and the second type is AD that purely appears in adulthood with the term adult-onset AD (Oninla et al., 2021). There are some factors that affect the pathogenesis of AD, such as genetics, skin barrier function, and immunological factors. The mutation of FLG (filaggrin) genes, as a natural moisturizing of the skin, is the most causes of skin barrier dysfunction in AD. The skin barrier dysfunction is showed by the increased of trans epidermal water loss (TEWL). This condition will facilitate the allergen to penetrate in the skin, and cause some irritations or inflammations. The immune response in AD showed that the polarization of Th2 (T helper 2) will facilitate the increasing and colonization of *Staphylococcus aureus*, IL-4 (Interleukin-4), and IL-13. It will inhibit the antimicrobial peptides (AMPs) and the skin will be more prone to *Staphylococcus aureus* infection (Wollenberg et al., 2018; Martalova & Saraswari, 2020).

The diagnostic criteria that commonly used in Indonesia are the Hanifin-Rajka criteria which include major and minor criteria. The diagnosis of AD is often associated with the determination of the severity of AD as assessed by SCORAD (Scoring of Atopic Dermatitis) and it will be related to the administration of the management. The Asia Pacific made an AD management guidelines contained of 5 pillars in AD management including patient education, prevention and modification of precipitating factors, improvement of optimal skin barrier function, management of inflammatory skin disorders, and control of the itch-scratch cycle (Chopra et al., 2017; Rubel et al., 2013). Some progress has been made in the management of AD in adults, but due to the chronic and relapse of

the disease, especially in adult patients, generally there was no satisfactory treatment for AD. The failure of the therapy or inadequate therapy can cause the recurrent inflammatory lesions and it will interfere patient's quality of life and sleep disturbances because of the itch-scratch cycle. The aim of this study is to evaluate the clinical and management of AD in adult patients in the Allergy Immunology Division Outpatient Clinic of Dr. Soetomo General Academic Hospital Surabaya 2016-2020 period.

Method

This study is a descriptive observational study with a retrospective approach that aims to evaluate the management of AD in adult patients in the Allergy Immunology Division Outpatient Clinic of Dr. Soetomo General Academic Hospital Surabaya 2016-2020 period. Data obtained from secondary data in the form of medical record files and electronic medical records.

Discussion

This study included 243 new adult AD patients during the 5-year period 2016-2020. The distribution of female patients with a total of 167 patients (68.7%) is higher than male patients with a total of 76 patients (31.3%). The largest age group was in the age group of 20-34 years with a total of 137 patients (56.4%). The most precipitating factor in AD was food with a total of 91 patients (37.4%). The most commonly given oral therapy was antihistamines with a total of 168 patients (69.1%) and the most widely administered topical therapy was moisturizer with a total of 147 patients (60.5%).

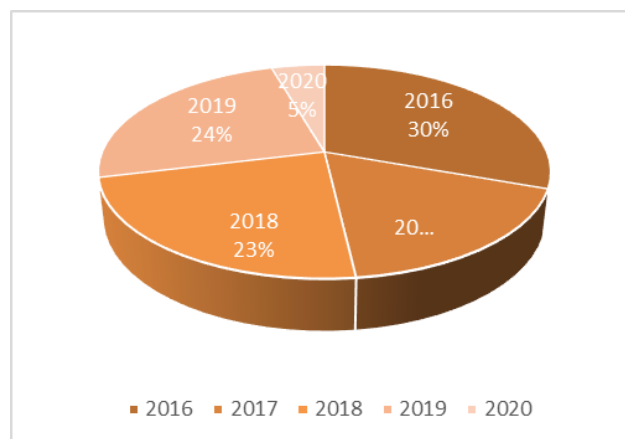


Figure 1. Total adult AD patients in the Allergy Immunology Division Outpatient Clinic of Dr. Soetomo General Academic Hospital Surabaya 2016-2020 period

Gender Distribution

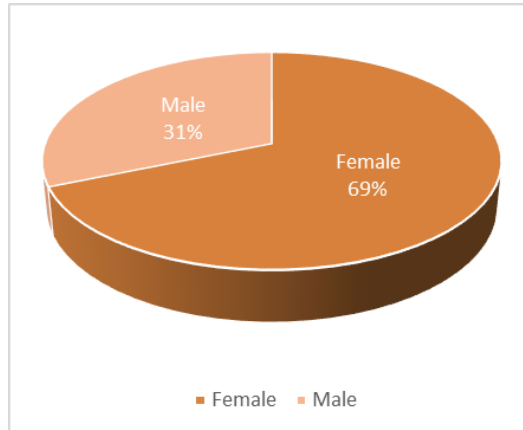


Figure 2. Gender distribution in adult AD patients in the Allergy Immunology Division Outpatient Clinic of Dr. Soetomo General Academic Hospital Surabaya 2016-2020 period

The number of new adult AD patients visit in the Allergy Immunology Division Outpatient Clinic of Dr. Soetomo General Academic Hospital Surabaya 2016-2020 period as many as 243 patients. The most visits were in 2016 as many as 74 new AD adult patients. New AD cases have decreased from year to year since 2016-2020 and the lowest new AD cases occurred in 2020, which was 11 patients. This can be due to the COVID-19 pandemic which was starting to increase in Indonesia at that time so that people limit their visits to Dr. Soetomo General Academic Hospital Surabaya. Other similar research data conducted by Widia and Hutomo in the Allergy Immunology Division of the Dermatology and Venereology Outpatient Clinic RSUD Dr. Soetomo Surabaya in 2009-2011 also mentioned a decrease in the number of new AD patient visits. AD patients in 2009 were 129 patients, in 2010 there were 126 patients and in 2011 there were 88 patients. The results of this study showed that AD in female patients (68.7%) was more than male patients (31.3%). The number of female AD patients each year was higher than men. These data are consistent with Eichenfield study, they mention that atopic dermatitis is more common in women than men with a ratio of 1,5:1. (Widia & Hutomo, 2015; Eichenfield et al., 2014).

Age Distribution

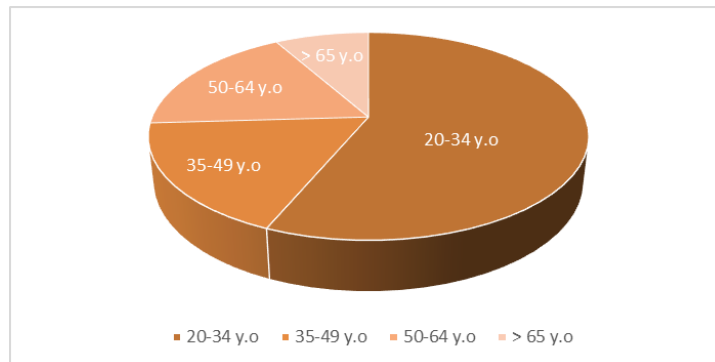
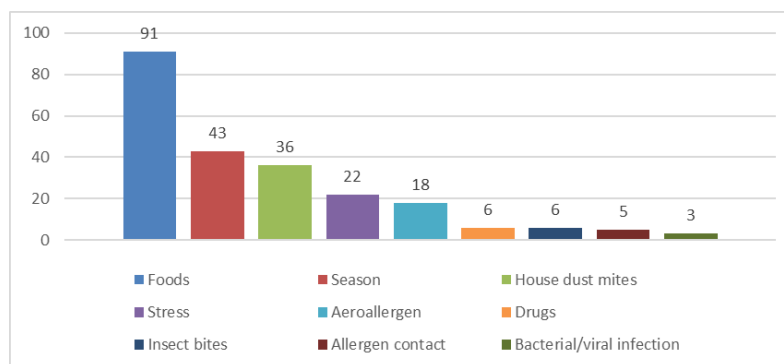


Figure 3. Age distribution in new adult AD patients in the Allergy Immunology Division Outpatient Clinic of Dr. Soetomo General Academic Hospital Surabaya 2016-2020 period

The results of this study indicate that new adult AD patients who came to the Allergy Immunology Division Outpatient Clinic of Dr. Soetomo General Academic Hospital Surabaya was mostly in the age range of 20-34 years as many as 137 patients (56.4%), followed by the age 35-49 years as many as 43 patients (17.7%) and age range 50-64 years as many as 43 patients (17.7%). This is in accordance with the demographic data of research in Finland which states that the highest prevalence of AD in adults is at the age of 30-39 years (33.81%) followed by the age of 50-59 years (23.32%). Similar research in Dr. Soetomo General Academic Hospital Surabaya in 2012-2014 also stated that the prevalence of the highest age group in adult AD cases was in the 25-44 year age group with a total of 81 patients (32%) (Eichenfield et al., 2014; Kliski et al., 2021; Herwanto & Hutomo et al., 2014; Effendi et al., 2020).

Trigger Factors

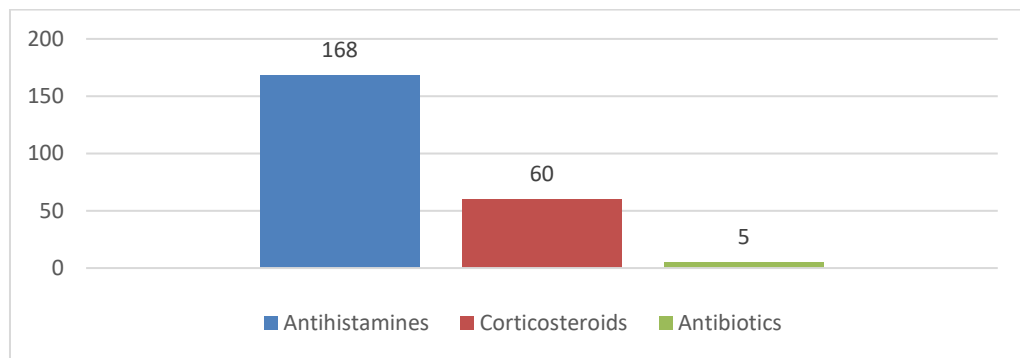


*One patient could have more than one trigger factors

Figure 4. The trigger factors in adult AD patients in the Allergy Immunology Division Outpatient Clinic of Dr. Soetomo General Academic Hospital Surabaya 2016-2020 period

The trigger factors for the onset of AD was mostly found in dietary factors, which were 91 patients (37.4%), followed by the second factor, seasonal factors as many as 43 patients (17.7%), and the third most common factor was house dust mites as many as 36 patients (14.9%). Previous similar research at RSUD Dr. Soetomo also stated that the highest factor was food with a total of 133 patients (42.1%), followed by the seasonal factor as many as 83 patients (26.3%), and the third most was the inhalation factor as many as 47 patients (14.9%). Most factors in both studies got the same results where food, season and inhalation are the main factors of atopic dermatitis. In some literatures mention that factors that can affect the risk of AD in adult patients include heavy daily activities, work environment, stress, sex hormones, progression of atopic dermatitis from a young age and lifestyle that includes food (cow's milk, eggs, soy products, flour, nuts, fish, fast food, and sugary drinks), and smoking habits (Eichenfield et al., 2014; Kliski et al., 2021; Herwanto & Hutomo et al., 2014; Effendi et al., 2020).

Atopic Dermatitis Management

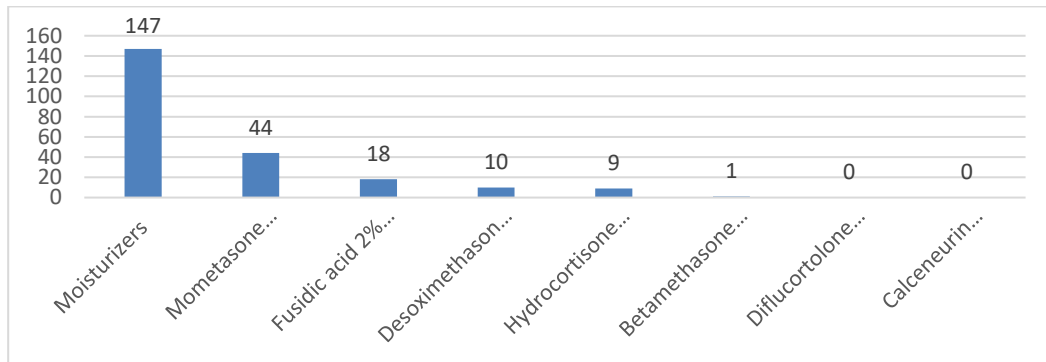


*One patient could have more than one oral therapies

Figure 5. Oral therapy distribution in adult AD patients in the Allergy Immunology Division Outpatient Clinic of Dr. Soetomo General Academic Hospital Surabaya 2016-2020 period.

The results of this study present the distribution of therapy both oral and topical in AD. The distribution of types of oral therapy in new adult AD patients in the Allergy Immunology Division Outpatient Clinic of Dr. Soetomo General Academic Hospital Surabaya 2016-2020 period, the most obtained were antihistamines as many as 168 patients (69.1%), followed by corticosteroids as many as 60 patients (24.7%) and antibiotics as many as 5 patients (2.1%). The data of this study are in accordance with the results of a previous similar study by Herwanto and Hutomo, where in the results of this study, the most commonly administered oral therapy was antihistamines in 234 patients (36.3%), followed by corticosteroids in 68 patients (10.5%) and antibiotics. as many as 12 patients (1.9%). The use of oral antihistamines is still frequently and commonly prescribed in AD, although there is some opposition. A systematic review of 15 studies that included randomized controlled trials and clinical trials, determined that there is insufficient evidence to support the use of antihistamines, but that antihistamines have the effect of relieving itching, calming and improving the quality of sleep for patients. The study suggested that short-term use of first-generation antihistamines with a

sedative effect could be prescribed for insomnia secondary to itching due to AD (Herwanto & Hutomo et al., 2014; Charmaine et al., 2012; Matteredne et al., 2019).



*One patient could have more than one topical therapies

Figure 6. Topical therapy distribution in adult AD patients in the Allergy Immunology Division Outpatient Clinic of Dr. Soetomo General Academic Hospital Surabaya 2016-2020 period

The distribution of topical therapy in new adult AD patients in the Allergy Immunology Division Outpatient Clinic of Dr. Soetomo General Academic Hospital Surabaya 2016-2020 period was moisturizer as the most given moisturizer as many as 147 patients (60.5%) followed by mometasone furoate 0.1% cream as many as 44 patients (18.1%). The data of this study differ from the results of previous similar studies by Herwanto and Hutomo, where in the results of this study the most widely used topical corticosteroid was desoximetasone 0.25% cream in 75 patients (44.1%). Topical corticosteroids recommended in the clinical pathway of RSUD Dr. Soetomo is a compress with a solution of physiology (in acute and exudative lesions), moisturizer and followed by corticosteroids such as hydrocortisone acetate 1-2.5%, diflucortolone acetate 0.1% or betamethasone valerate 0.05-0.1% (in dry and non-exudative lesions) (Herwanto & Hutomo et al., 2014; Frazier & Bhardwaj, 2020; Simpson et al., 2019).

Conclusion

This study revealed that most of AD in adult patients were female and the largest age was in 20-34 years old group. Foods were present as the most trigger factor in AD. The management of AD in adult patients were quite similar with children, antihistamine presented as the most given oral therapy that could relieve the itch, and improve the quality of sleep in adult patients. Moisturizers were present as the most frequently used topical therapy of AD in adult patients which can reduce the skin barrier disfunction as the most causes of AD.

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