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Review Article

The Systemic Therapy of Atopic Dermatitis in Outpatient Clinic Division of Allergy and Immunology at Dr. Soetomo General Hospital in 2013

Yolanda*, Gwenny Ichsan Prabowo and Damayanti

Department of Medical Faculty, Airlangga University, Indonesia

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***Corresponding author**

Yolanda, Department of Medical Faculty, Airlangga University, Indonesia,
Email: yolandajuly19@gmail.com

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Abstract

Background: Atopic Dermatitis (AD) is a chronic skin disease which often relapsed and associated with abnormallity skin barrier, allergen sensitization and recurrent skin infection. This research was conducted to figured out the prevalence of AD patients which treated by the systemic therapy in Outpatient Clinic of Allergic and Immunology Division of DR.Soetomo Hospital in 2013. As well as there is a lack information of this issue in Indonesia.

Methods: The authors used observational descriptive as a research design. The instrument are used from medical records. The new patients of AD who treated by systemic therapy as a sample. The variable are the types of systemic therapy their used and the profile of patient.

Result: All of AD patients used Cetirizine the antihistamin as the mayor systemic therapy (100%). 32 patients took corticosteroid Dexamethasone (34,7%). 2 patients used antibiotics (2.2%). The Algorithms of therapy according to Consensus guideline for management atopic dermatitis in asia pacific.

Introduction

Atopic Dermatitis (AD) is a chronic skin disease which often relapse and associate with abnormality skin barrier, allergen sensitization and recurrent skin infection. Babies and children are common. Insidence of AD at Outpatient Clinic is increasing every year. The Amount of AD patients in 2006 was 116 (8,14%), in 2007 was 148 (11,05%) and 2008 was 230 (17,65%) [1-3].

AD research was limited especially about the prevalence of the systemic therapy. The unsatisfied therapy of AD caused by long term therapy and relapsed was still happens.

Methods

The design of this research are observational descriptive. The sample was all of the new AD patients at Outpatient Clinic in 2013. The variable taken by the type of the systemic therapy that patient consumed, age, gender, jobs, the chief complaint, the onset, the atopic history, the morphology of lesion and predilection of lesion. The secondary data from medical records as the instrument. The data has been collected and assembled in descriptive. The result will be presented in tables and images.

Result

The amount of AD patients who got systemic therapy in throughout a year in 2013 was 92 patients (Table 1). The prevalence of a chief complaint of the AD pateints at Outpatient clinic Division of Allergy and ImmunologyDr.Soetomo General Hospital Surabaya in 2013.

According Table 1, women are more common in AD who treated by the sytemmic therapy, there are approximately 65 patients (70,7%). The group of 15-24 years old are most dominant toacquired AD, 35 patients (38%). Based on the collected data, the jobs of AD patients are 40 patients an employee of non government (43,5%), 15 patients are a housewife (16,3%) and 6 patients are a public servants (6,5%).

According Table 2, the most chief complaint that brought patients to the hospital are the pruritus skin, there are 70 patients (76,1%). The onset of the chief complaint were begun less than one year 47,8%, in between 1-12 months as 32,6%, more than one year about 16,3%.

The history of atopic in AD patients themselves are 23,9%. Meanwhile, the history of atopic in family member of AD patients are approximately 19,6%. The most types of atopic which experienced by patients are rhinitis allergic 14,1%. On the other hand, there are asthma bronchiale

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Table 1: The prevalence of a chief complaint of the AD pateints at Outpatient clinic Division of Allergy and Immunology Dr. Soetomo General Hospital Surabaya in 2013.

Age	Gender		Total
	Men (%)	Women (%)	
1-4 years old	0 (0,0%)	1 (1,1%)	1 (1,1%)
5-14 years old	0 (0,0%)	2 (2,2%)	2 (2,2%)
15-24 years old	9 (9,8%)	26 (28,3%)	35 (38%)
25-34 years old	4 (4,3%)	6 (6,5%)	10 (10,9%)
35-44 years old	6 (6,5%)	15 (16,3%)	21 (22,8%)
45-54 years old	2 (2,2%)	6 (6,5%)	8 (8,7%)
55-64 years old	4 (4,3%)	4 (4,3%)	8 (8,7%)
65-74 years old	1 (1,1%)	3 (3,3%)	4 (4,3%)
>75 years old	1 (1,1%)	2 (2,2%)	3 (3,3%)
Total	27 (29,3%)	65 (70,7%)	92 (100%)

Table 2: The prevalence of chief complaint in AD patients at Outpatient clinic Division of Allergy and Immunology Dr. Soetomo General Hospital Surabaya in 2013.

The Chief Complaint	Amounts (%)
Pruritus	70 (76,1%)
Pruritus and redness skin	21 (22,8%)
Redness skin	1 (1,1%)
Total	92 (100%)

10,9%, urticaria 2,2%, both asthma bronchiale and rhinitis allergic 7,6%. Asthma bronchiale, rhinitis allergic and urticarial in the same patient 1,1%.

In Physical examination were found the most morphologic are erythema as 68 patients (73,9%). Another morphologic are papule 46,7%, lichenification 41,3%, erossion 36,9%, xerosis 29,3%, Ichthyosis 26,1%, excoriation 20,6%, hyperpigmentation 8,7%, pustule 8,7%, vesicle 2.2%. The predilection were found are the extensor 89,2%, on the face 9,8%, the trunks 9.8%, the neck 3,3% and the flexor 2,2%.

The most common systemic therapy were given to 92 patients are antihistamine (Figure 1). Another options are corticosteroid

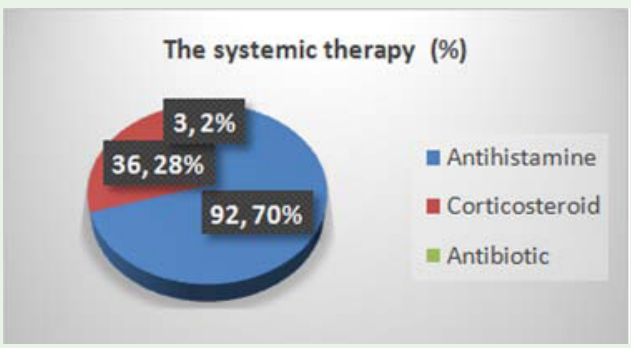

Figure 1: The prevalence of the systemic Therapy in AD patients at Outpatient clinic Division of Allergy and Immunology Dr. Soetomo General Hospital Surabaya in 2013.

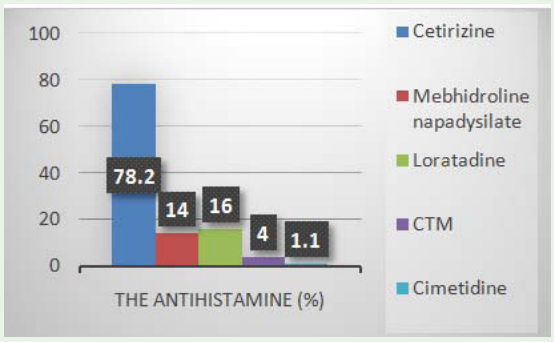

Figure 2: The Prevalence of Antihistamine in AD patients at Outpatient clinic Division of Allergy and Immunology Dr Soetomo General Hospital in 2013.

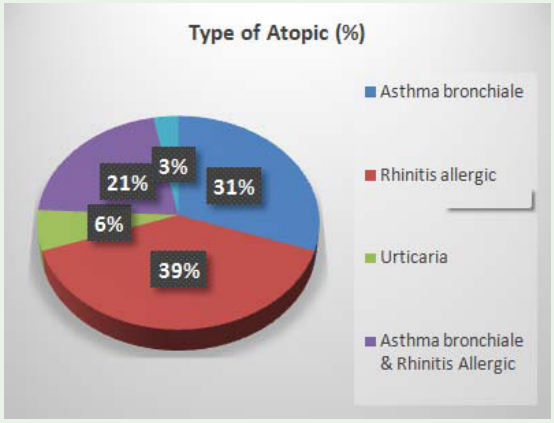

Figure 3: The Prevalence of the type of Antihistamine in AD patients at Outpatient clinic Division of Allergy and Immunology Dr Soetomo General Hospital 2013.

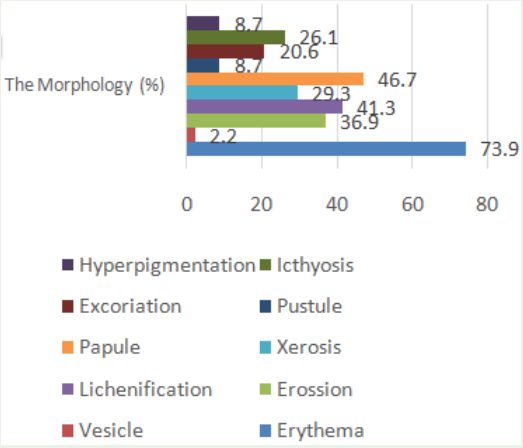

Figure 4: The prevalence of morphology in AD patients at Outpatient clinic Division of Allergy and Immunology Dr. Soetomo General Hospital Surabaya in 2013.

and antibiotics. The most given antihistamine are Cetirizine 78,2%. Dexamethasone are popular corticosteroid for AD, approximately 34,7%. The rarely therapy that used among AD are antibiotics, Erythromycin and Amoxycillin 1,1% (Figures 2- 4).

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Discussion

In this research women are the most gender who suffering AD. It was matched with the research in korea that shown women are common in AD than men. There are literature which revealed babies and toddler are most in AD and tend to developed until they grow up. FLG gene are allegedly play a role to increasing the AD risk in babies. However in Dr.Soetomo General Hospital, the patients below 14 years old admitted in pediatric outpatient clinic [1,4,5].

According Table 2, the most chief complaint made patients seek the doctor are pruritus. The pruritus may appear caused by skin barrier disfunction called FLG gene mutation. FLG took a part for filagrin coding. Filagrin is a cornoecytes stabilizer which forming the skin barrier. When filargrin been interrupted, the allergen are free to made penetration into the skin and became the pruritus skin. In AD patients there are immunologic deficiency, those are increasing IgE and lymphocyte T dysfunction. On early phase reaction of AD, after the allergen bind to IgE on the surface of the mast cell, then degranulation of mast cell occurred. Thus, the histamine and the cytokines came out of the mast cells then appeared symptoms such as dominant pruritus and redness of the skin [6,7].

Children with AD might increasing the susceptibility to suffering asthma bronchiale and rhinitis allergic, mainly a child who has AD below 2 year old approximately 50% to acquired asthma bronchiale. The patients who has atopic history tend to experienced clinical manifestation heavier than patients with no atopic history [4].

The acute lesion of AD, commonly marked by the intensed pruritus, papule erythema with excoriation, vesicle and the serous exudate. Then, in subacute lesion arearised the erythema, excoriation with scaling papule. In chronic lesion marked by thickening plaque, protruded of skin markings and fibrotic papule (prurigo nodule). The predilection of lesion could be classified based on age and the disease activity. In the babies patient, the lesion often appear on face region, scalp and extensor extremity. In adolescence who has AD longger than the babies, might developed to chronic AD with lichenification and located erythema in the flexor folds. In adult patient, the lesion mostly on cubiti fossa, popliteal fossa, neck and wrist. The lesion may appeared are papule, vesicle and lichenification [6,8].

The management of AD with systemic therapy in dermatology department of Dr.Soetomo General Hospital such as, antihistamine, corticosteroid and antibiotic. The antihistamine has given are Cetirizine, Chlorpheniraminemaleat, Dipenhydramine HCL and Loratadine. The corticosteroid mostly given are Prednisone and Dexamethasone. If there are secondary infection on AD lesion, could be given Erythromycin. The secondary infection in AD usually caused by S.aureus [6].

The antihistamine are agonist substance which binding to the histamine receptor, thus the receptor could stand in inactive state. Antihisamine H1 decreasing the proinflamation cytokines production, adhesion molecule expression and eosinophil chemotaxis. Antihistamine H1 divided into two groups. The first generation of antihistamine H1 (sedative) and the secondary generation of antihistamine H2 (non sedative). Antihistamine H1 has sedative effect that acts on muscarinic, α adrenergic and serotonine. On the other hand, sedative antihistamine also acts on cardiac ion channel. It has heterocyclic rings which increasing lipophilic, then could entry to the brain barrier. The examples of H1 sedative are Chlorpheniramine, Cyproheptadine, Dipenhydramine, Hydroxyzine and Tripenelamine. Non sedative H1 binding in non competitive on H1 receptor and it has longer half time than the sedative H1. Non sedative H1 has selectivity of H1 receptor, it makes less lipophilic and less sedative. Therefore, from the safety aspect H1 non sedative saftier than sedative. There are some examples non sedative H1 such as Cetirizine, Loratadine, Acrivastine, Azelastine and fexofenadine. Antihistamine has been chosen as an effort to decreasing the pruritus symptoms. Thus, the antihistamine could be increasing the quality of patiens life. In the literature Cetirizine has been the choice of AD in children, approximately 8-16 years Cetirizine could be given at 10mg/dose, once in oral route [6,9-11]. The corticosteroid mechanism of action are binds to cytoplasmic receptors then makes translocation to the nucleus to regulate the transcription of gene which involved in inflammation cascade in AD, hence could fixed the clinical feature of patients as fast as possible. Corticosteroid sytemic would be chosen if the topical therapy and antihistamine could not give an effect as much as expected. Dose of Dexamethasone for adult patient are 0,5-1 mg/dose could give 2-3 times a day and for child are 0,1 mg/kg/day and do the tapering dose to minimize the suppression of adrenal glands [6,12,13].

The administration of antibiotics if there is a symptoms lead to secondary infection. It could happens caused by decreasing of skin barrier function in AD patients. The most common infection that have found caused by Staphylococcus aureus. In adult patients are found 107unit of S.aureus in approximately 90% culture result. Erythromycin dose in adut are 250-500 mg/dose could given 3-4 times a day in oral route, while child 15-25 mg/dose, 3 times a day in oral route [6,14].

Conclusion and advice

The result of profile evaluation in therapy systemic for AD patients are matched with asia pacific guideline for AD. Antihistamine are the most sytemic therapy in Dr. Soetomo hospital. The most chosen antihistamine are Cetirizine. Dexamethasone are popular corticosteroid for relieve the AD inflammation in Dr. Soetomo hospital. Antibiotics that have been used are Erythromycin and Amoxicillin. The result of gender prevalence that common in AD are woman. The age group that popular in AD are 15-24 years old. The most predilection are the extensor extremity in AD patients in Dr.Soetomo hospital.

The advice for Division of allergy and immunology in Dr.Soetomo are the responds of therapy systemic in AD patients could be input in medical record for evaluation. Then, SCORAD index could be applicated in the future in clinical assessment. The research of AD still necessary becausethe therapy of AD still unsatisfied and made AD still relapsed.

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