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# Dermatitis Herpetiformis with Celliac Disease: A Case Report

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**Abstract:** ***Background: Dermatitis herpetiformis (DH) is an autoimmune disease characterized by the existence of an extremely itchy papulovesicular eruptions. The prevalence of dermatitis herpetiformis is more common in Europeans and rarely in Asians, only 10-39 per 100,000 people population. Dermatitis herpetiformis events are most commonly associated with gluten-sensitive enteropathy or thecelliac disease. Case report: There is a reported case of dermatitis herpetiformis in a 42year old male. This patient complained of the appearance of blistersfilled with clear fluid that felt very itchy and increased in number on both arms, body, back, buttocks and legs since the past 2 weeks. In the dermatologic state, there were grouped of vesicles, bullae, hyperpigmented plaque, hyperpigmentation macule, erosion, excocriation of both upper and lower arms, body, back, both buttocks and both legs. The results of histopathological examination concluded the formation of dermatitis herpetiformis with the discovery of subepidermal multilocular bullae containing PMN leukocytes and PMN leukocyte cells (Papillary microabses) in the papillae dermis. Currently the patient is givendapsone 1x100 mg,cetirizin tablet 1x10 mg. The prescribed diet management is a gluten-free diet. Discussion: Dermatitis herpetiformis is associated with intolerance to gluten. Skin biopsy and immunofluorescence are the gold standard in this case. Gluten-free diet management and dapsone prescription are the main options in the treatment of DH.***

**Keywords:** dermatitis herpetiformis, celiac disease, gluten hypersentivity

## 1. Introduction

Duhring's disease or *dermatitis herpetiformis* (DH) is a chronic and residual disease, the rash is polymorphic, especially in the form of vesicles, arranged in groups and symmetrical and accompanied by a very itchy feeling. Dermatitis herpetiformis is also a multisystem disease with primary skin manifestations. In 1884 Louis Dühring first described the clinical picture of DH. In 1888 Broq reported a patient with a very similar disorder and named it *Dermatitepolymorpheprurigineuse*.[1]

The relationship between DH and small bowel disorder was first investigated by Marks in 1966. And then, Fry dick and Shuster et. al. named this small bowel disorder as *Gluten sensitive enteropathy* (GSE). This disease is a chronic disease with very itchy subjective complaints and causes grouped papulovesicular lesions.[2] The course of the disease is characterized by remissions and exacerbations. It usually persists indefinitely even with different degrees of disease. Onset can occur at any age but the most frequent is the 2nd, 3rd or 4th decade.[3]

A definite diagnosis cannot be confirmed by physical examination alone. This is due to several other diseases also provide the same symptoms, such as the formation vesicobulous lesions and ulcerative lesions. Thus, an incisional biopsy examination is needed to diagnose dermatitis herpetiformis. The general condition of patients with dermatitis herpetiformis is better than the other bulachronic diseases, namely Pemphigus vulgaris and pemphigoidbulosa. If it left untreated, the disease could persist for years with low activity accompanied by acute exacerbations.[4]

DH management can be non-medical and medical. A gluten-free diet provides several benefits, including avoidance of side effects associated with dapsone therapy, the improvement of intestinal symptoms, and the treatment options aimed more at the cause rather than the symptoms of the disease. However, suppression of early symptoms with dapsone is always necessary. Dapsone is intended to control the disease, but cannot cure the disease. A close and constant monitoring is required for the side effects that may occur.[5]

## 2. Case Report

A 42-year-old man came to the Dermatology-Venereology outpatient clinic of Dr. M. Djamil Hospital Padang with chief complaint. There are bubbles filled with clear fluid that feels very itchy and has appeared a lot on the arms, body, back, buttocks and legs since the past 2 weeks. This complaint was felt by the patient since 5 years ago. There was a history of frequent fatigue, gastrointestinal disorders such as nausea, vomiting and diarrhea, there is also a history of frequent consumption of foods made from flour such as instant noodles. Furthermore, there is a history of joint pain and fatigue. Physical examination revealed vesicles in groups, bullae, hyperpigmentation macule, plaque, hyperpigmented plaque, erosion, excoriation and yellowish crusts on the face, body, back, arms and legs (Figure 1.A-D).

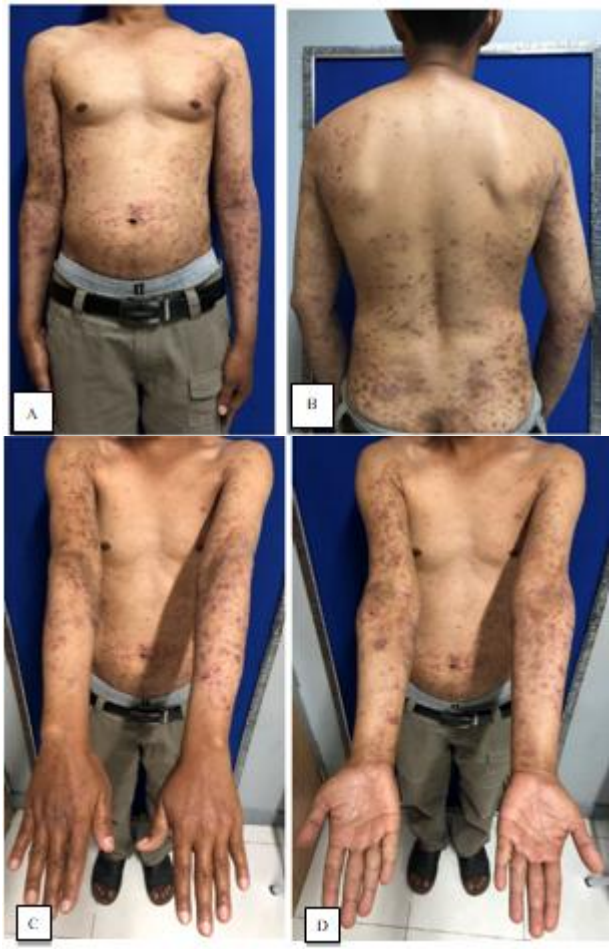

**Figure 1:** A-D. Multiple tense vesicles and bullae with area of erosions with crusts are symmetrically seen on the A. Truncus anterior, B. Truncus posterior, C. Extremitities superior, D. Extremities superior.

The histopathology graphics show the existence ofvesicobulose reaction at the top of the papillae dermis (**theblack box**). On the histopathological examination, it is shown that inflammatory cells dominated by neutrophils in the papillae dermis forms microabscesses (papillary microabscesses, also known asPierardmicroabscesses) (**the blue arrow**). The apex of the dermal papillae is detached from the epidermis above it forming a subepidermal cleft (**the red arrow**) which contains clusters of neutrophils and neutrophil fragments. The basement membrane appears intact. At the upper and medial dermis an invasion of perivascular lymphocytes is seen (**the green arrow**) (Figure 2).

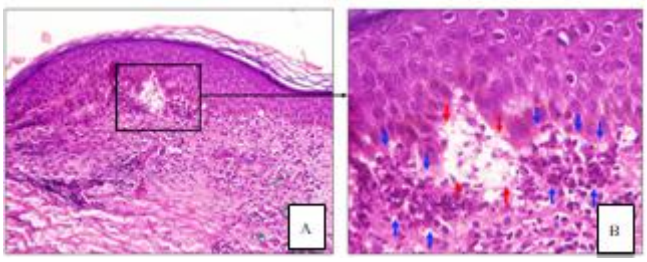

**Figure 2:** Histopathology features of the presented case. **A.** Epidermis shows pseudoephiteliomatous hyperplasia (the black arrow) with irregular achantosis proliferatively into dermis and grow superficially. Mitosis is difficult to find. The dermis consists of granulomatous reactions (the red arrows).(H&E;10x)**B.** Showing higher magnification of red box on figure 2.A; there is a granuloma (the blue box) with round thick-walled dark brown sclerotic bodies (the blue arrows).(H&E;20x)

This patient was diagnosed dermatitis herpetiformis and treated with dapsone 150 mg per day, cetirizine 10 mg per day, mometasonefuroatcream 0,1% twice a dayand gluten free diet.In this patient the symptoms diminished within 2 weeks and there were hyper pigmented lesions after 4 weeks of treatment.

## 3. Discussion

Dermatitis herpetiformis (DH) or also known as duhring morbus is an autoimmune skin disease that is chronic and very itchy, followed by the recurring and rare papulovesicular lesions' appearance. The prevalence of dermatitis herpetiformis is commonly happened to the Northern Europeans. The ratio of men to women is higher, 1.5:1 to 2:1. Dermatitis herpetiformis can occur at any age, but mostly in young adults, between 15 and 40 years. The prevalence of dermatitis herpetiformis varies from country to country.[1] In Germany, 1:100,000 new cases per year, Ireland 58.8:100,000, Sweden 20-39:100,000 and Scotland 11:100,000. Although DH is a common disease in the Caucasian population, it is rarely found in Asians. In the Skin and Genital Unit of the RSCM in 1985, 5 new cases were recorded and in 1986, 7 new cases were found.[2]Meanwhile, in RSUP Dr. M. Djamil Padang DH, it is considered as one of the rare cases. From January 2014 to December 2019, we only had one patient diagnosed with Dermatitis herpetiformis.

This disease is associated with *gluten-sensitive enteropathy* (GSE) or *celiac disease* (CD) which is believed to play an important role in its pathogenesis. Although it's in the minimum condition, DH patients will experience gastrointestinal disturbances when the patient consumes gluten. Some literature suggests that gluten plays an important role in the pathogenesis of DH. Gluten contains gliadin, a soluble alcohol fraction, which is believed to be a component of the antigen that causes allergic reactions.[3] Gluten can be found in rye, flour, and wheat. Recent discoveries of antiepidermal antibody IgA Tgase suggest that resistant epidermal IgA Tgase complex can form on the skin of DH patients. However, only a small number of DH patients were found to have IgA and Tgase epidermal tissue colonization deposits in the perivascular pattern. Although IgA deposits in the skin play an important role in pathophysiological formation of the bullae, they remain unclear. This hypothesis still needs further research. In addition, genetic factors are known to be the basis for this disease.[4] The patient has a history of frequent consumption of foods made from flour since the last 7 years.

The primary lesions of dermatitis herpetiformis are clustered vesicles, plaque, erythematous papular. The main abnormality is the vesicles, therefore it is called herpetiformis which means like the Herpes zoster or herpes simplex. The vesicles can be composed of arsinars or sirsinar. The walls of the vesicles or bullae are usually tense but large bullae are rare to find. There may also be erosion or

crusting, hyperpigmented and hypopigmented lesions if the vesicles or ruptured bullae. The distribution of the lesions is usually symmetrical on extensor surfaces, such as the elbows, knees, sacrum, buttocks, back. Lesions are rare on the oral mucosa, palms, and feet. The general condition of the patient is good. The patient's subjective complaint is the extreme itchiness, such as burning or stinging sensation. On Nikolsky's examination, the results were negative. Patients can usually estimate the site of new lesions 8-12 hours in advance because the area feels itchy and stinging.[5,6] There are also clustered vesicles with the basic erythmatose and bullae on both body arms anterior and posterior, both buttocks and and limbs. The symmetrical distribution of the lesions in areas of the elbows, shoulders, buttocks and knees is very itchy. No nikolsky sign was found in the patient. The patient admitted to feeling the itching and burning sensations before the appearance of the vesicle, papule lesions.

Dermatitis herpetiformis patients are sensitive to gluten, but only a few have symptoms of colic or general intestinal absorption with a ratio of 1: 5.[7] It is found from the patients the gastrointestinal complaints, such as nausea, diarrhea and bloody defecation. The patient then was consulted for the internal medicine department. Colonoscopic examination was performed on the patient with the result that there was a tumor on the sigmoid part. Furthermore, a histopathological examination was carried out from the results of the intestinal biopsy of the patient with the result that there was an increase in the number of lymphocytes, plasma cells and several PMNs in the epithelium and lamina propria. There is a picture of loss of the small intestine villus and destruction of the epithelium cells. In another section, colon tissue with polypod growth appears, the mucosa is lined with goblet-celled columnar epithelium, the “pencillite” nucleus. The patient was diagnosed with traditional serrated adenoma, grade 3 hemorrhoids and celliac disease.

The diagnosis of DH can be made based on clinical, histopathological, serological, immunofluorescence and genetics.[8] In addition to clinical manifestations, the criteria for DH diagnosis in this patient were obtained by histopathological examination where there was a vesicobulose reaction at the top of the dermal papillae. The patient was examined for histopathology with hematoxillin eosin staining and immunofluorescent examination. On the histopathological examination, an invasion of inflammatory cells dominated by neutrophils in the papillae dermis forms microabscesses (papillary microabscesses, also called Pierardmicroabscesses). The apex of the dermal papillae detaches from the overlying epidermis to form a subepidermal cleft which contains clusters of neutrophils and neutrophil fragments. In the upper and medial dermis there is perivascular lymphocytes which leads to the diagnosis of dermatitis herpetiformis.

Immunofluorescent examination is required to diagnose dermatitis herpetiformis where IgA deposits are found in the papillae dermis. These IgA deposits are not affected by medication, but may decrease or disappear with a long-term gluten free diet. IgA deposits are patchy throughout the skin and can be detected more easily in normal skin adjacent to active lesions.[9] On immunofluorescent examination, the patient did not reveal any IgA, IgM, or IgG deposits. The results of direct immunofluorescence examination give false negative outcome. A strong immune response decreases IgA antibodies at the site of the lesion. Therefore, sampling should be ensured of healthy skin.[9]

The four findings used to support the diagnosis of DH are papulovesicle lesions, pruritus, or papulexcoriation on the surface of the extensor area, neutrophil infiltration in the papillae dermis accompanied by vesicle formation at the dermo-epidermal junction, granular IgA deposits in the dermal papillae on normal skin around the lesion.The skin response which occurs due to sensitivity to gluten can distinguish the dermatitis herpetiformis from the other vesicobulosic diseases such as pemphigoid bullosa and pemphigus vulgaris.

Dermatitis herpetiformis management are non-medical and medical. A gluten-free diet provides several benefits, including avoidance of side effects associated with dapsone therapy, improvement of intestinal symptoms, and treatment options for the cause rather than the symptoms of the disease. However, suppression of early symptoms with dapsone is always necessary. Dapsone is the drug of choice in DH therapy. Contraindications to dapsone administration are hypersensitivity to dapsone and/or its derivatives, G6PD deficiency, severe hepatic and renal dysfunction, and cardiopulmonary decompensation. No teratogenic effects were found, although there were no controlled studies in humans. Dapsone prescription is intended to control the disease, but cannot cure the disease. A close and constant monitoring is required for the side effects that may occur.[10]

Patients are given dapsone therapy, the initial dose given is 100 mg / day. Theoretically, the corrective response will occur 3 hours or for several more days. Dapsone has no intestinal side effects. Dapsone is important as an anti-inflammatory and inhibits neutrophil uptake via chemotaxis and also suppresses neutrophil-mediated tissue.[10] In this patient, new lesions developed after 2 weeks of 100 mg of dapsone therapy. Based on the literature, if the patient does not respond to the minimum dose given, the dose can be increased,whilethe maximum dose of dapsone therapy is 400 mg. The patient was given dapsone tablets 150 mg / day. Cetirizine is given to reduce symptoms of itching with a dose of 10 mg / day and mometasonefuroat cream 0.1% 2 times a day for the red spots. A combination therapy with a dietitian is required for a gluten-free diet. On this patient, symptoms decreased within 2 weeks of being given dapsone 150 mg / day and there were hyperpigmented lesions after 4 weeks of treatment.

## 4. Conclusion

The findings that are used tosupport the diagnosis of DH in thispatients are from clinical appearance and histopathology examination. Early diagnosis, early appropriate therapy and regular evaluation should be stimulated to improve quality of life and prevent complications and morbidities for DH patient.

## References

[1] Ronaghy A., Katz H. Dermatitis herpetiformis. In: Wolff K Goldsmith
[2] Cardones A, Hall G. Pathophysioplogy of dermatitis hereptiformis: A model for cutaneous manifestations of gastrointestinal inflamation immunoallergy Clin. North Am. 263-74
[3] Antiga E,Telles FQ, Hoog S, Wagner D, Santos L, Salgado CG, Vicente VA. et al. The diagnosis and tretament of dermatitis herpetiformis clin cosmet. Investig.Dermatol. 2017;30:233-276.
[4] Bolotin D. Dermatitis herpetiformis: part I: Epidemiology, pathogenesis, and clinical presentations. J.Am.Acad.Dermatol
[5] Sukmawati N, Ervianty E. Penelitian Retrospektif : Dermatitis herpetiformis : A Retrospective study). BIKKK - Berkala Ilmu Kesehatan Kulit dan Kelamin - Periodical of Dermatology and Venereology. 2015;27(3):183-190.
[6] Yahya S, Widaty S, Miranda E, Bramono K. Dermatitis herpetiformis at the Department of Dermatology and Venereology dr. Cipto Mangunkusumo National Hospital, Jakarta, 1989-2013. J Gen Pro DVI. 2016;1(2):36-43.
[7] Chauhan P, Jindal R, Shirazi N. Dermatitis herepetiformis. Indian Dermatology Online Journal. 2019:2018-2019.
[8] Jayasree P, Malakar S, Raja H, Nair NG. Dermatitis herpetiformis. International Journal of Dermatology. 2018:1-2.
[9] Subhadarshani S, Yadav D. Dermatitis herpetiformis. Dermatol Pract Concept. 2017;7(4):6.
[10] Anjaneyan G, Jagadeesan S, Thomas J. Dewrmatitis herpetiformis. Indian Dermatology Online. 2016;7(2):145-146.

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