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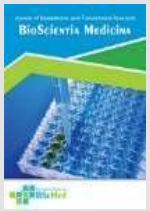

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Dermoscopy Evaluation of Erythema Dyschromicum Perstans Treated with Combination of Topical Steroid and Narrowband-Ultraviolet B: A Case Report

Aisha Triani[1*], Satya Wydya Yenny[1]

[1]Department of Dermatology and Venereology, Faculty of Medicine, Universitas Andalas/Dr. M. Djamil General Hospital, Padang, Indonesia

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***Corresponding author:**
Aisha Triani

E-mail address:
aishariani24@gmail.com

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A B S T R A C T

Background: Erythema dyschromicum perstans (EDP), also known as ashy dermatosis, is an uncommon, acquired, and persistent skin condition identified by development of hyperpigmented macules of varying sizes on the trunk, face, and extremities. It exact cause is unknown, and there is ongoing debate surrounding its treatment. Dermoscopic assessments may prove beneficial in evaluating the effectiveness of therapeutic interventions. **Case presentation:** We present a case of a 20-year-old woman with numerous hyperpigmented macules of brown to slate-grey on her upper trunk, stomach, back, and extremities over the past three years. The patient reported no symptoms such as itching, numbness, or pain. Upon physical examination, mild anemia but otherwise healthy. On physical examination there are multiple brown-grey patches with reddish borders of varying sizes distributed across the body, with unaffected mucosa, scalp, palms, soles, and nails. Dermoscopic examination unveiled a widespread distribution of brown to grey backgrounds with a pinkish homogeneous appearance. Histopathological examination suitable for erythema dyschromicum perstans. The patient received a diagnosis of erythema dyschromicum perstans and underwent treatment involving a combination of topical steroids and Nb-UVB administered three times weekly for a duration of 8 weeks. **Conclusion:** This condition presents a cosmetic concern throughout the patient's lifetime and significantly affects their quality of life. After 8 weeks of the combination of topical steroids and Nb-UVB, there was a improvement of erythema and lesion appear lighter. This observation suggests that a treatment with a consistently favorable outcome has not been identified and necessitates further investigation.

1. Introduction

Erythema dyschromicum perstans (EDP) is a disorder of pigmentation that is characterized by gray or blue-brown macules or patches in individuals with Fitzpatrick skin types III-V. The lesions are usually distributed symmetrically on both sun-and non-sun-exposed areas, including the trunk (69.1%), limbs, neck, and face.

The pathophysiology and an exact cause of ashy dermatosis or erythema dyschromicum perstans is currently unknown. The condition is most common in Asia and Central and South America, and most of the prepubertal patients suffering from ashy dermatosis were Caucasians (52%) and Hispanics (36%) [1,2]

Occur between childhood until early adulthood this disorder has make a great impact on the patient's life. The exact etiology of EDP is unknown. Damage to melanocytes and basal cell keratinocytes that is observed with EDP is postulated to be due to an abnormal immune response to antigens with a predominance of CD8 + T lymphocytes in the dermis and HLA-DR +, intercellular adhesion molecule 1 + keratinocytes in the epidermis. A genetic susceptibility conferred by genes located in the major histocompatibility complex (mostly HLA-DR4) has also been found 60% positive in patient with EDP in

Hispanic population. Despite the growing body of literature on EDP since 1957, there are no treatments that are consistently effective.[3]

2. Case Presentation

A 20-year-old woman with numerous asymptomatic browns to grey macules over the upper trunk, abdomen, back and extremities for the past 3 years. The patient did not report any symptoms such as itching, numbness, or pain. There is no known history of other relatives having the same skin condition. On physical examination, the patient is anaemic but otherwise healthy, and the dermatological quality index (DLQI) score was moderate.

Figure 1. Clinical finding of multiple slate-grey macules some with erythematous border on face, trunk and extremities.

Dermatological findings are light brown to grey round-oval patches with borders of varying size throughout the body, whereas the mucosa, scalp, palms, soles, and nails are absent. Examination using Wood's lamp showed the presence of pigmentation in the epidermis and dermis layer.

Figure 2. Wood's lamp examination showed pigmentation in the epidermis and dermis layer.

Dermoscopic examination revealed brown to grey spots and a homogeneous pink background. In our patient we performed a punch biopsy on the lesion on the left lower abdomen where the specimen was taken on a hyperpigmented macular lesion with an erythematous margin.

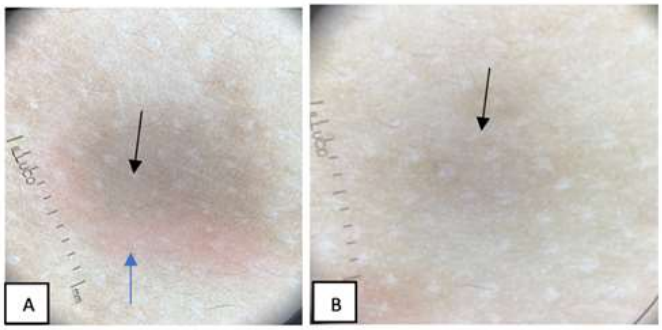

Figure 3. polarized dermoscopy with Illuco ids-1000□: A) before therapy: greyish background (black arrow) with homogenous pinkish background (blue arrow) compare to B) After 8 weeks therapy, greyish background (black arrow).

Histopathological examination showed hyperkeratosis, vacuolar changes in the dermis, melanophages and lymphocyte cell powder, perivascular plasma cells, and peri-adnexa.

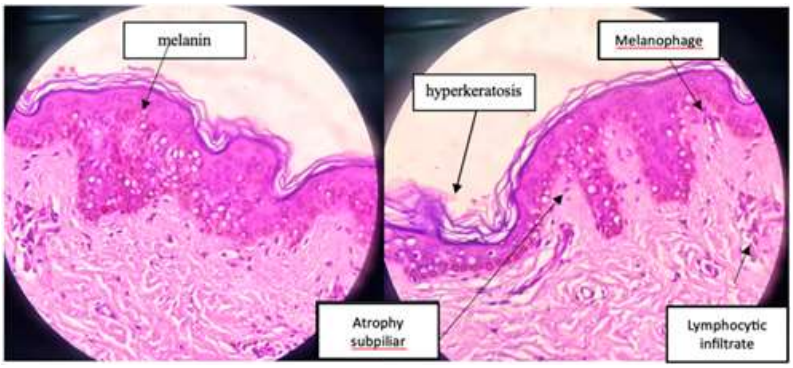

Figure 4. Histopathological examination.

The patient was then diagnosed with erythema dyschromicum perstans and treated with a combination of topical steroids mometasone furoate 0.1% and Nb-UVB with initial dose of 300 mj/cm^2 and increased by 10% to 15% per session as tolerated three times a week for 8 weeks.

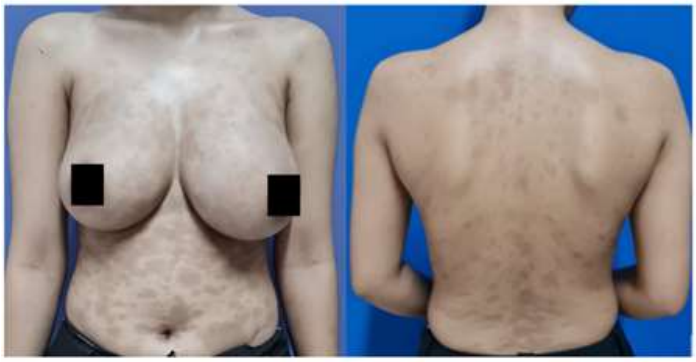

Figure 5. Post-combination therapy for 8 weeks with topical steroids and Nb-UVB.

3. Discussion

Erythema dyschromicum perstans presents as slowly progressive hyperpigmented macules and occurs most often in patients with Fitzpatrick skin phototypes III-V. Lesions can be symmetrically distributed on the face, neck, over the trunk and upper extremities and characterized of lesions was a large hyperpigmented macules > 5cm. Dermoscopy can assist in evaluating treatment result in EDP, it can help to visualized the improvement of erythema and hyperpigmented lesion response to given therapy. Though this condition is chronic and very difficult to treat, there is a slow progression of the lesion over several years, usually without spontaneous regression.[4]

There is no established gold standard treatment. There are several treatments that can be used for EDP including photoprotection with a wide-brimmed hat, sunglasses, photo-protective clothing, sunscreen with an SPF of 30–50+. Topical therapy is hydroquinone 4%, topical retinoids such as adapalene 0.1–0.3% or tretinoin 0.025–1%, combination depigmentation cream and systemic therapy minocycline, dapsone, hydroxychloroquine and isotretinoin have also been reported to be used for EDP. Currently, several case reports show the potential of NB-UVB as adjuvant therapy and can be combined with topical corticosteroids or with tacrolimus, showing good results in 4 case reports.[8,9]

Narrowband-UVB has been successfully used to treat EDP in three case reports, including our case, all with minimal to no side effects.[11 -14] One case presented a patient with a resolution of EDP after a prolonged period of intense sun exposure for approximately 6 years.[3] Thus, the most promising topical treatment at this time is tacrolimus. Tacrolimus is a macrolide antibiotic medication with immunosuppressive properties, exerting its effects principally through the inhibition of calcium-dependent events such as the interleukin (IL) 2 gene transcription, nitric oxide synthase activation, cell degranulation, and apoptosis Tacrolimus was described with success in the treatment of EDP either as a monotherapy or in combination. But due to tacrolimus were not available in Indonesia as for now, it is difficult to administer this medication.[3,8-9,15-17]

Leung et al in 2018 reported a case of 17 years old boy with history of 1.5 years of EDP treated with combination of NB-UVB and topical clobetasol and tacrolimus. NB-UVB was initiated at 300 mJ three times a week and increased by 10% to 15% per session as tolerated. The patient continued to use topical clobetasol and tacrolimus. After 2 months of NB-UVB therapy, the patient experienced a resolution of the erythema and pruritus and a significant decrease in hyperpigmentation of his lesions. The patient was satisfied with the results and did not require any further treatment. The patient has been in remission for 4 years.[3,18-20]

4. Conclusion

A case of erythema dyschromicum perstans in a 20-year-old female patient who was treated with a combination therapy using topical corticosteroids and narrow-band UVB. There was a reduction in erythematous lesions and minimal depigmentation in the patient's lesions after completing 8 weeks of phototherapy sessions. Further treatment and follow up is still needed for a longterm result. But the present combination therapy seems to response to minimize the erythema and hyperpigmented lesion as shown in post therapy dermoscopic finding.

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