Journal of Clinical & Experimental Dermatology Research

Imbernón-Moya, et al., J Clin Exp Dermatol Res
2016, 7:3
DOI: 10.4172/2155-9554.1000347

Short Communication Open Access

Photosensitive Lichenoid Eruption Induced by Gabapentin

A Imbernón-Moya*, H Cembrero-Saralegui, M Churruca-Grijelmo, M Martínez-Pérez, E Vargas-Laguna, E Fernández-Cogolludo, A Aguilar-Martínez and MA Gallego-Valdés

Department of Dermatology, Hospital Universitario Severo Ochoa, Avenida de Orellana, Spain

***Corresponding author:** Adrián Imbernón-Moya, Department of Dermatology, Hospital Universitario Severo Ochoa, Avenida de Orellana, 28045, Spain, Tel: 0034646443193; E-mail: adrian_imber88@hotmail.com

Received date: February 04, 2016; **Accepted date:** April 19, 2016; **Published date:** April 22, 2016

Abstract

Gabapentin usually has a good safety profile with adequate tolerance. The incidence of adverse reactions in skin, hair and mucosa due to gabapentin is low. Here, we present a case of lichenoid photosensitive eruption due to application of gabapentin in exposed areas.

A lichenoid eruption with skin lesions that are widespread distributed requires a drug history as well as stopping the consumption of the drug in question. Patch test and/or phototest confirm the diagnosis.

Keywords: Photosensitive; Lichenoid eruption; Drug; Gabapentin; Patch test

Introduction

Gabapentin is useful to treat epilepsy, neuropathic pain and essential tremor. It has a good safety profile with adequate tolerance and low incidence of adverse reactions. The most common side effects include gastrointestinal upset, drowsiness, dizziness, fatigue, and ataxia [1]. Several skin eruptions due to gabapentin have been reported.

Case presentation

Caucasian 69-year-old man complained of a very itchy rash on trunk that lasted three days. The patient was treated with oral gabapentin 300 mg/day for trigeminal neuralgia two weeks before this skin reaction. The patient had not been previously treated with gabapentin and was subject to no other medical treatment at the time. The patient had also been exposed to the sun causing first-degree burns on the back days before rash. Family history was non-contributory. Cutaneous examination revealed multiple flat papules, erythematous-purple, bright, coalescing and grouped in the upper back area (Figure 1a and 1b). Several papules have a fine scaling surface and Wickham striae are not appreciated. Dermographism was negative. Mucous membranes, scalp, nails or the rest of the skin surface were no affected.

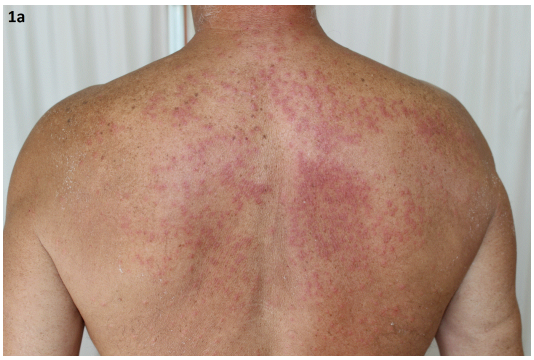

Figure 1a: Erythematous-purple papules and plaques coalescing and grouped in the upper back area.

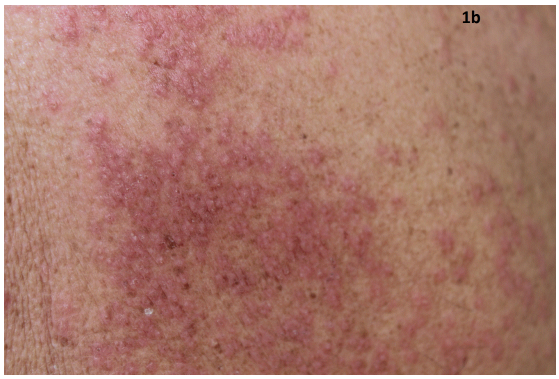

Figure 1b: At higher magnification shiny and violaceous papules and plaques.

All the following laboratory evaluations were in the normal range: biochemical parameters, complete blood cell count, white blood cell

count, differential count, erythrocyte sedimentation rates, serum protein electrophoresis, quantitative serum immunoglobulins, C3 and C4 levels, antinuclear antibodies. Syphilis, HCV, HBV and HIV serology were negative.

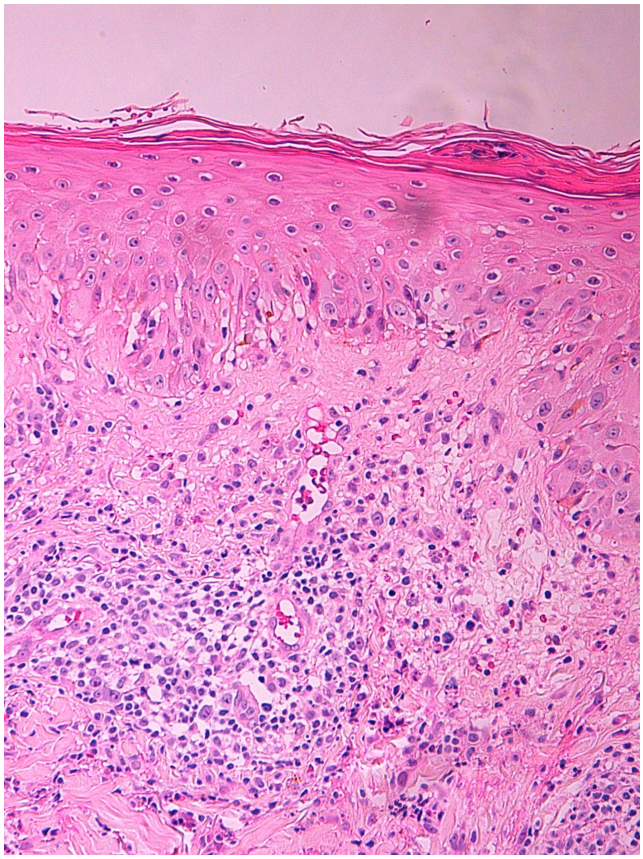

Figure 2: Epidermis with parakeratosis, isolated keratinocyte apoptosis, and vacuolar degeneration of the dermal-epidermal interface, and mixed dermal inflammatory infiltrate with lymphocytes, plasma cells and eosinophils (hematoxylin-eosin 20X).

A cutaneous punch biopsy showed histological findings of toxicodermia with interface dermatitis (Figure 2).

Patch test according to the Spanish Contact Dermatitis Group (True test®) were performed and gabapentin was also tested. The only positive substance was found in the patch of the gabapentin.

According to the clinical, histological and patch test results, the cause for lichenoid photosensitive eruption was concluded to be due to gabapentin.

Consequently, Gabapentin was discontinued and sun exposure was stopped. As a therapy, the patient started with oral antihistamines (dexchlorpheniramine 6 mg/8 hours) and topical corticosteroids (mometasone furoate 0.1% cream 2 times a day) obtaining a favourable response with improvement of the skin lesion. This was completely resolved after three weeks. Residual macular hyperpigmentation was seen. The patient has maintained regular monitoring for 6 months without receiving further treatment with gabapentin and without clinical recurrence.

Reactions
Peripheral oedema (2-8%) [5]
Cutaneous leucocytoclastic vasculitis [8]
Rash in adulthood (1-10%) and childhood (0.4-3% cases) [9]
Stevens-Johnson syndrome [10]
Photosensitivity (0.1-1%) [1,6,7]
Facial oedema (<1%)
Acneform eruption (>1%)
Pruritus (1%)
Purpura (<1%)
Xerostomia (2%)
Gingivitis (<1 %)
Others: Sweet's syndrome, bullous pemphigoid, eczema, herpes simplex, herpes zoster, hipersensitivity, jaundice, melanosis, necrosis, nodular eruption, pigmentation, psoriasis, seborrhea, ulcerations, urticaria, vasculitis, xerosis, alopecia, hirsutism, glossitis, mucositis, sialorrhea, stomatitis.

Table 1: Skin and mucosal reactions due to gabapentine.

Discussion

Gabapentin is approved by the Food and Drug Administration for epilepsy and postherpetic neuralgia. It is now used to treat various forms of chronic pain and other conditions such as fibromyalgia, trigeminal neuralgia, diabetic neuropathy, postoperative analgesia, migraine headaches, insomnia, restless leg syndrome social phobia, depression, bipolar disorder and panic disorder. The mechanism of action of gabapentin remains unknown, but it is believed that it causes an inhibition of alpha 2 delta voltage dependent calcium channel subunit leading to reduced neurotransmitter release and decreased postsynaptic excitability. The half-life of gabapentin is between 5 and 7 hours. Several skin manifestations due to gabapentin are reported (Table 1) [1-10].

Lichenoid drug-induced eruptions often occur in patients in the seventh decade of life (mean age 66 years) with no sex predilection. The latency period can vary from several weeks to years. It depends on several factors such as the type of drug, the previous administration, frequency of administration, dosage, the individual reaction of the patient and concomitant therapy with other drugs. The aetiology is unknown but photoallergy mechanism or a specific cellular immune response by delayed hypersensitivity are suggested [11-14].

Drugs associated with photosensitive lichenoid eruption [12-16] include quinine, quinidine, thiazide, furosemide, torasemide, enalapril, diazoxide, capecitabine, clopidogrel, sparfloxacin, tetracycline, isoniazid, tiotropium bromide, ethambutol, chlorpromazine, carbamazepine, 5-fluorouracil and pyritinol.

Unlike idiopathic lichen planus, drug lichenoid eruption usually has a generally bilateral, symmetrical and more widespread distribution of the skin lesions in exposed areas, with predominant involvement of the trunk and limbs. The skin lesions usually present an eczematous, psoriasiform or pink rosea-like morphology at an early stage. They can also present a similar morphology of idiopathic lichen planus.

Wickham striae are not seen. The mucous membranes, the scalp and the nails are not usually affected [11-13,15,16].

Histological findings are similar to lichen planus pattern, associated with focal parakeratosis, deep perivascular inflammatory infiltrates and the presence of eosinophils, neutrophils and plasma cells in the cellular infiltrate [11-13,15,16].

The differential diagnosis must be established with idiopathic lichen planus, actinic lichen planus, lupus erythematosus, chronic actinic dermatitis, lichenoid keratosis, pellagroid dermatosis, allergic contact dermatitis, polymorphous light eruption and phototoxic dermatitis [11-13,15].

Clinical, histological and patch test findings associated with the healing of the skin eruption after discontinuation of the suspect drug confirms the diagnosis [11-16].

Symptomatic treatment is required. Topical and oral corticosteroids are effective. Healing time after the cessation of drug can vary from several weeks to months, usually leaving a residual hyperpigmentation. The consumption of the drug concomitantly with sun exposure could cause a more severe and extensive rash with lower latency period [11-13,16].

Acknowledgements

Fernando Burgos Lazaro, Department of Pathology. Hospital Severo Ochoa, Leganés (Madrid).

References

1. Parsons B, Tive L, Huang S (2004) Gabapentin: A pooled analysis of adverse events from three clinical trials in patients with postherpetic neuralgia. Am J Geriatr Pharmacother 2: 157162.
2. Moore RA, Wiffen PJ, Derry S, Toelle T, Rice AS (2014) Gabapentin for chronic neuropathic pain and fibromyalgia in adults. Cochrane Database Syst Rev 4:CD007938.
3. Sills GJ (2006) The mechanisms of action of gabapentin and pregabalin. Curr Opin Pharmacol 6: 108-113.
4. Litt JZ (2012) Litt's Drug Eruption & Reactions Manual. (18th edn.) Informa healthcare p.232.
5. Kahlon A, Gnanabakthan N, Dhillon A, Subedi D (2015) A rare case of bilateral lower extremity edema due to low dose gabapentin therapy in a youngmale patient. J Basic Clin Pharm 6: 117-118.
6. Gustorff B, Hoechtl K, Sycha T, Felouzis E, Lehr S, et al. (2004) The effects of remifentanil and gabapentin on hyperalgesia in a new extended inflammatory skin pain model in healthy volunteers. Anesth Analg 98: 401-407.
7. Herrmann M, Menz J, Olsson O, Kümmerer K (2015) Identification of phototransformation products of the antiepileptic drug gabapentin: Biodegradability and initial assessment of toxicity. Water Res 85: 11-21.
8. Poon DY, Law NM (2003) A case of cutaneous leukocytoclastic vasculitis associated with gabapentin. Singapore Med J 44: 42-44.
9. Gijsen VM, de Wildt SN, Ito S (2009) Probability of rash related to gabapentin therapy in a child. Ann Pharmacother 43: 387-389.
10. DeToledo JC, Minagar A, Lowe MR, Ramsay RE (1999) Skin eruption with gabapentin in a patient with repeated AED-induced Stevens-Johnson's syndrome. Ther Drug Monit 21: 137-138.
11. Shiohara T, Kano Y (2012) Lichen planus and lichenoid dermatoses. In: Bolognia JL, Jorizzo JL, Schaffer JV. Dermatology. (3ªedn.) Elsevier Limited, p.193-194.
12. Halevy S, Shai A (1993) Lichenoid drug eruptions. J Am Acad Dermatol 29: 249-255.
13. Fox GN, Harrell CC, Mehregan DR (2005) Extensive lichenoid drug eruption due to glyburide: a case report and review of the literature. Cutis 76: 41-45.
14. Lee AY, Jung SY (1998) Two patients with isoniazid-induced photosensitive lichenoid eruptions confirmed by photopatch test. Photodermatol Photoimmunol Photomed 14: 77-78.
15. Pérez-Pérez L, Cabanillas M, Pereiro Ferreirós MM, Peteiro C, Toribio J (2007) Photosensitive lichenoid eruption and inhaled tiotropium bromide. Dermatology 214: 97-98.
16. Kolm I, Eggmann N, Kamarashev J, Kerl K, French LE, et al. (2013) Lichenoid Drug Eruption following Intravenous Application of Orally Formulated Diamorphine, a Semisynthetic Heroin. Case Rep Dermatol 5: 176-180.