



CASE REPORT | *PHYSIOLOGY & PHARMACOLOGY*

Unusual cutaneous adverse effect of carbamazepine: A case of drug-induced vitiligo

Nivasini Natarajan Thangam¹, Vikram Balaji¹ , Arunkumar Ramaraj¹ , Kala Paneerselvam¹ , JamunaRani Raveendran¹

¹Department of Pharmacology, SRM Medical College Hospital and Research Centre, Chennai, India

***Corresponding author:**

Nivasini Natarajan Thangam,
Department of Pharmacology,
SRM Medical College Hospital
and Research Centre, Chennai,
India.

nivasini.natarajan@gmail.com

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ABSTRACT

Vitiligo is a chronic autoimmune skin disorder with a global prevalence of 0.5–2%, highest noted in the Indian subcontinent. Drug-induced vitiligo from carbamazepine is rare, with only two reported cases. This report describes a South Indian woman in her mid-30s who developed acrofacial vitiligo after 2 years of carbamazepine use. A dermatologist's opinion was obtained and suggested carbamazepine withdrawal. Repigmentation occurred after 3 months of carbamazepine withdrawal, and a Naranjo score of 7 indicated a probable causal link. Clinicians should monitor long-term carbamazepine users for dermatological adverse effects, as early detection and discontinuation may reverse symptoms.

Keywords: Acrofacial vitiligo, Carbamazepine, Case report, Drug-induced vitiligo, Trigeminal neuralgia

INTRODUCTION

Vitiligo is a chronic autoimmune skin disease with a global prevalence of 0.5–2%, with the highest rates in the Indian subcontinent, affecting 8.8% of the population.¹ The autoimmune hypothesis explains the pathogenesis of vitiligo.² Drug-induced vitiligo is a rare adverse effect associated with carbamazepine. Carbamazepine, an anticonvulsant, is a sodium channel blocker also used as a first-line therapy in trigeminal neuralgia. The most common adverse effects include dizziness, drowsiness, ataxia, nausea, and vomiting.³ This study presents a rare case report of vitiligo associated with carbamazepine use.

CASE REPORT

A woman in her mid-30s with a two-year history of trigeminal neuralgia was prescribed carbamazepine 200 mg twice daily. She had no prior history of skin diseases or autoimmune diseases. After two years of therapy, she noticed the gradual onset of hypopigmented patches on the lower lip and adjacent perioral region, characteristic of vitiligo. After obtaining written informed consent from the patient, the pictures were taken. The affected area exhibited complete depigmentation, with no signs of erythema, scaling, or inflammation, indicating a non-inflammatory loss of melanocytes [Figure 1]. The pigmentation surrounding the affected area is normal. There were no signs of secondary infection, atrophy, or scarring. The location of the lesion in the perioral region suggests involvement of mucocutaneous areas, which can be

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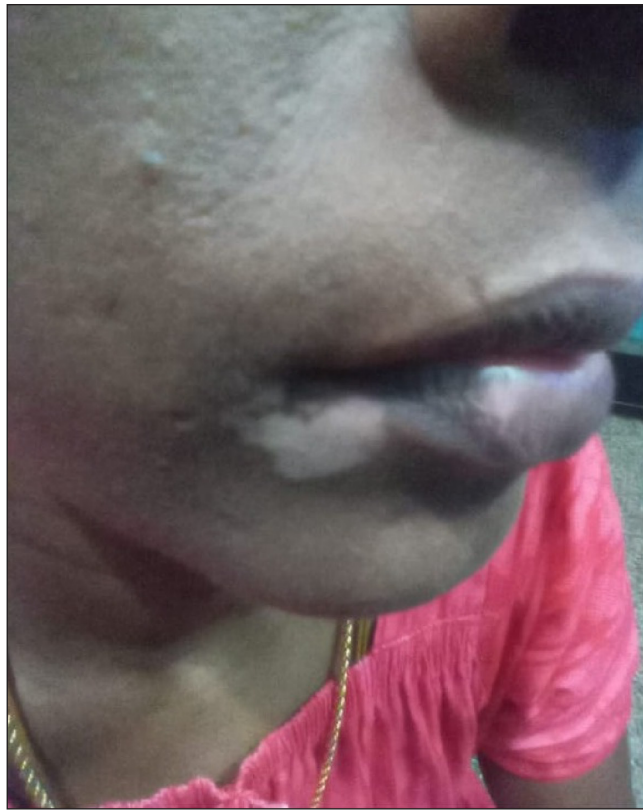


Figure 1: Hypopigmented patches after carbamazepine therapy. Original picture obtained after patient's consent.

cosmetically distressing considering her age and may impact the patient's quality of life. The laboratory investigations ruled out thyroid and autoimmune disorders. Multiple sclerosis is often associated with vitiligo, and it was ruled out based on the clinical examination. The dermatologist confirmed it as a case of acrofacial vitiligo, likely associated with carbamazepine, confirmed through a Wood's lamp examination, which highlighted depigmented lesions with a distinct milky-white appearance. Carbamazepine was discontinued, and the patient was started on gabapentin 300 mg orally at bedtime. The patient was reviewed after 3 months, and the hypopigmented patches began to pigment, indicating reversibility [Figure 2]. The patient remains under follow-up with no recurrence of symptoms.

In this case, the patient developed an adverse reaction 2 years following the administration of carbamazepine. Naranjo's algorithm was used to determine a plausible reaction due to carbamazepine. The following criteria were considered:

Naranjo scale assessment

The Naranjo Score [Table 1] for this patient is 7, indicating a probable adverse drug reaction due to carbamazepine. The reaction was temporally related, improved upon discontinuation

Table 1: Naranjo's scale

Question	Response	Score
1. Any previous conclusive reports of carbamazepine on this reaction?	Yes	+1
2. Does depigmentation appear after the suspected drug was given?	Yes	+2
3. Did the reaction improve when the drug was discontinued?	Yes	+1
4. Did the reaction reappear when the drug was re-administered?	No	0
5. Are there alternative causes that could solely have caused the reaction?	No	+2
6. Was the drug detected in the blood in toxic concentrations?	No	0
7. Was the reaction more severe when the dose was increased or less severe when the dose was decreased?	No	0
8. Any similar reactions to carbamazepine or other drugs in the past?	No	0
9. Was the adverse event confirmed by objective evidence?	Yes	+1

Total Naranjo score: 7. A score of +2 indicates a strong temporal relationship between drug administration and onset of reaction; A score of +1 indicates some evidence supporting the drug as the cause; A score of 0 indicates insufficient or unknown evidence supporting the drug as the cause.



Figure 2: Repigmentation after discontinuation of carbamazepine. Original picture obtained after patient's consent.

of the drug, had no strong alternative cause, and was confirmed by a dermatologist using objective diagnostic tools (Wood's Lamp). However, the lack of rechallenge (re-administration of the drug) prevents a definite classification.

DISCUSSION

This case report highlights a rare occurrence of carbamazepine-induced vitiligo in a patient on long-term therapy for trigeminal neuralgia. Unlike a previously reported case where the patient developed erythema and widespread redness before progressing to depigmentation within 2 weeks of drug initiation, our patient exhibited a gradual onset of hypopigmented lesions after 2 years of treatment without preceding inflammation.^{4,5} The absence of erythema, scaling, or other inflammatory signs suggests a non-inflammatory loss of melanocytes. A probable causal link was established using the Naranjo scale (score of 7), further supported by lesion repigmentation after discontinuing carbamazepine.

CONCLUSION

Given the prevalence of vitiligo in India, clinicians should closely monitor patients undergoing prolonged carbamazepine therapy for any dermatological changes. Early detection and drug withdrawal can lead to symptom reversal, underscoring the need for further research on drug-induced vitiligo.

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REFERENCES

1. Haulrig MB, Al-Sofi R, Baskaran S, Bergmann MS, Løvendorf M, Dyring-Andersen B, *et al.* The global epidemiology of vitiligo: A systematic review and meta-analysis of the incidence and prevalence. *JEADV Clin Pract* 2024;3:1410–9.
2. Speckaert R, van Geel N. Vitiligo: An update on pathophysiology and treatment options. *Am J Clin Dermatol* 2017;18:733–44.
3. Fricke-Galindo I, LLerena A, Jung-Cook H, López-López M. Carbamazepine adverse drug reactions. *Expert Rev Clin Pharmacol* 2018;11:705–18.
4. Assaedi LM, Alshamrani HM, Abbas RA, Alghamdi FA. Carbamazepine-induced reversible vitiligo. *JAAD Case Rep* 2022;26:3–5.
5. Saeedloo M, Shariat SV. Non-recurrence of carbamazepine induced vitiligo after rechallenge with carbamazepine. *Iran J Psychiatry* 2013;8:201–3.

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