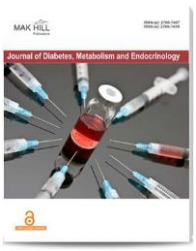
ISSN Print: 1813-176x
ISSN Online: 1994-4624
International Journal of Molecular Medicine and Advance Sciences
https://ijmmas.com/



Research Article

Capecitabine–Oxaliplatin-Induced Acute Cutaneous Lupus Erythematosus in a Patient with Rectal Cancer

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Article History
Received: 02.07.2026
Accepted: 05.08.2026
Published: 21.08.2026

Doi: 10.61336/ijmmas.22-03-.03

Abstract: Background: Drug-induced cutaneous lupus erythematosus (CLE) is an uncommon adverse drug reaction characterized by lupus-like skin manifestations occurring after exposure to an offending medication. Although several drugs are recognized triggers, chemotherapy-associated acute CLE is rare. We report a case of acute cutaneous lupus erythematosus following treatment with capecitabine and oxaliplatin in a patient with rectal carcinoma. ***Case Report:*** A 41-year-old woman with rectal carcinoma underwent proctectomy in February 2024, followed by adjuvant capecitabine and oxaliplatin chemotherapy in 21-day cycles. Seven days after completing the sixth cycle, she developed an erythematous, markedly photosensitive facial eruption along with diffuse nonscarring hair loss. Examination revealed erythematous-to-violaceous scaly papules and plaques over predominantly sun-exposed areas, including the malar region, forehead, and preauricular areas. A violaceous hyperpigmented patch over the hard palate suggested a previous mucosal lesion. Diffuse brownish-black pigmentation was also present over the palms and soles, preceded by erythema and burning after the first chemotherapy cycle, consistent with hand-foot syndrome. There were no systemic symptoms or clinical features suggestive of systemic lupus erythematosus. Laboratory investigations showed hemoglobin 10.8 g/dL, leukocyte count 3,790/mm^3, and platelet count 50,000/mm^3, with normal liver and renal function. Skin biopsy demonstrated epidermal atrophy, focal keratotic plugging, lymphocytic exocytosis, cytoid bodies, basal cell vacuolisation, and dense superficial and deep perivascular and periadnexal lymphocytic infiltrates with interstitial mucin, consistent with cutaneous lupus erythematosus. The patient was treated with oral prednisolone 30 mg daily and strict photoprotection, resulting in marked improvement within one month. Chemotherapy was continued because of the favourable response and the need to maintain oncological treatment. **Conclusion:** This case highlights the rare occurrence of chemotherapy-associated acute cutaneous lupus erythematosus following capecitabine and oxaliplatin therapy. The temporal association, characteristic photosensitive eruption, supportive histopathology, absence of systemic involvement, and rapid response to corticosteroids supported the diagnosis. Recognition of this adverse reaction is important to facilitate appropriate dermatological management while avoiding unnecessary interruption of essential anticancer therapy.

Keywords: Acute cutaneous lupus erythematosus; drug-induced lupus; capecitabine; oxaliplatin; chemotherapy; photosensitivity; rectal carcinoma; hand-foot syndrome; telogen effluvium.

INTRODUCTION

Drug-induced cutaneous lupus erythematosus (CLE) is an uncommon adverse cutaneous reaction characterized by photosensitive lupus-like eruptions following exposure to certain medications. Chemotherapy-associated CLE is rare and may be difficult to distinguish from other treatment-related dermatological adverse effects.

Capecitabine and oxaliplatin are commonly used in the management of colorectal malignancies, but their association with acute CLE is infrequently reported. We present a rare case of acute cutaneous lupus erythematosus developing during combined capecitabine and oxaliplatin therapy in a 41-year-old woman with rectal carcinoma, emphasizing the importance of recognizing chemotherapy-associated photosensitive eruptions, confirming the diagnosis histopathologically, and instituting appropriate treatment while allowing continuation of essential anticancer therapy.

CASE REPORT

A 41-year-old woman was diagnosed with rectal carcinoma in early 2024. She underwent proctectomy in February 2024 and subsequently received adjuvant chemotherapy with capecitabine and oxaliplatin. Chemotherapy was administered in 21-day cycles, with capecitabine given for 14 days followed by a 7-day treatment-free interval. Treatment was initiated on 9 April 2024.

Seven days after completion of the sixth chemotherapy cycle, the patient developed an erythematous rash over the face associated with marked photosensitivity. She also reported generalized hair loss from the scalp for approximately 15 days. There was no history of fever, myalgia, arthralgia, oral ulceration, or other systemic symptoms suggestive of systemic lupus erythematosus (SLE).

Cutaneous examination revealed erythematous to violaceous, scaly papules and plaques involving predominantly sun-exposed areas, including the malar region, forehead, and preauricular areas. Diffuse nonscarring hair shedding consistent with telogen effluvium was also noted. A violaceous hyperpigmented patch was present over the hard palate, suggestive of a previous mucosal lesion, although the patient did not recall any preceding symptoms. In addition, diffuse brownish-black pigmentation was present over the palms and soles. On detailed questioning, the patient reported that these areas had initially developed erythema and burning pain after the first cycle of chemotherapy, consistent with chemotherapy-induced hand-foot syndrome. The clinical findings were strongly suggestive of a drug-induced photosensitive cutaneous lupus eruption. There were no clinical features suggestive of systemic involvement.

Laboratory investigations showed haemoglobin of 10.8 g/dL, total leukocyte count of 3,790/mm^3, and platelet count of 50,000/mm^3. Liver and renal function tests were within normal limits, and routine urine examination and microscopy revealed no significant abnormality. No other lupus-specific clinical or laboratory indicators were identified. A skin biopsy was performed from the cutaneous lesion. Histopathological examination showed focal keratotic plugging, epidermal atrophy, lymphocytic exocytosis, cytoid bodies, and basal cell vacuolisation. The superficial and deep dermis showed a dense perivascular and periadnexal lymphocytic infiltrate with interstitial mucin deposition. These findings were compatible with cutaneous lupus erythematosus.

The patient was treated with oral prednisolone 30 mg daily along with strict photoprotection and broad-spectrum sunscreen. There was marked clinical improvement, with resolution of the active lesions and residual post-inflammatory hyperpigmentation after approximately one month. The corticosteroid was subsequently discontinued, while continued photoprotection was advised. Importantly, chemotherapy with capecitabine and oxaliplatin was not discontinued because of the favourable clinical response and the need to maintain the planned oncological treatment. The temporal relationship between chemotherapy exposure and the onset of the eruption, the absence of previous lupus manifestations, characteristic clinical findings, supportive histopathology, and improvement following corticosteroid therapy supported a diagnosis of chemotherapy-associated acute cutaneous lupus erythematosus, with capecitabine and oxaliplatin considered the probable offending agents.

DISCUSSION

Drug-induced lupus erythematosus encompasses a spectrum of autoimmune manifestations triggered by medications. Cutaneous manifestations may occur independently of systemic lupus and can clinically resemble idiopathic acute or subacute CLE. Drug-induced CLE is considerably less common than other dermatological adverse effects associated with anticancer therapy.

Capecitabine has previously been implicated in the development of subacute cutaneous lupus erythematosus. Rocha et al. reported capecitabine-induced subacute CLE, highlighting the potential of this fluoropyrimidine to induce lupus-like cutaneous reactions.[1] The occurrence of CLE during combined capecitabine and oxaliplatin therapy is particularly noteworthy because both drugs are widely used in colorectal cancer treatment, whereas lupus-like cutaneous reactions remain uncommon.

The pathogenesis of drug-induced lupus remains incompletely understood. Several mechanisms have been proposed, including the formation of reactive drug metabolites that bind to carrier proteins and subsequently induce an immune response. Altered processing and clearance of apoptotic cells may expose normally sequestered autoantigens and promote loss of immune tolerance. Drug-induced cellular injury may also contribute to the release of nuclear antigens and subsequent autoimmune activation.[2] Another proposed mechanism involves epigenetic changes, particularly DNA hypomethylation, which may alter T-cell gene expression and promote T-cell activation and autoreactivity.[2]

In the present case, the absence of systemic symptoms, normal renal and hepatic parameters, absence of urinary abnormalities, characteristic photosensitive lesions, and compatible histopathological findings favoured a diagnosis confined to the skin rather than systemic lupus erythematosus. The concurrent hand-foot syndrome following the initial chemotherapy cycles further demonstrated the patient's susceptibility to cutaneous adverse effects of treatment.

An important feature of this case was that chemotherapy could be continued without recurrence or progression of the cutaneous lesions after treatment with systemic corticosteroids and implementation of strict photoprotection. This highlights the importance of early recognition and appropriate dermatological management rather than automatically discontinuing potentially life-saving anticancer therapy.

CONCLUSION

This case highlights a rare occurrence of acute cutaneous lupus erythematosus during combined capecitabine and oxaliplatin therapy in a patient with rectal carcinoma. Clinicians should be aware that new photosensitive eruptions developing during chemotherapy may represent drug-induced CLE and should be distinguished from common chemotherapy-related skin reactions. Early dermatological evaluation, histopathological confirmation, corticosteroid therapy, and rigorous photoprotection can result in rapid improvement and may allow continuation of essential anticancer treatment.

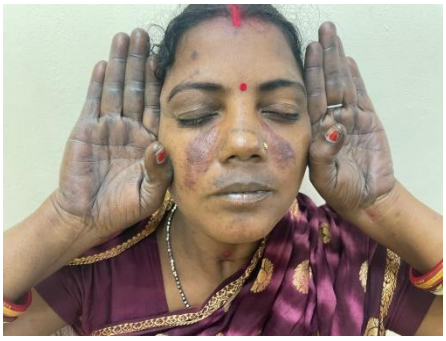

Figure 1: Cutaneous lesion showing a well-demarcated erythematous to violaceous, necrotic-appearing plaque with central crusting and surrounding pigmentation during chemotherapy.

Figure 2: Clinical improvement after 30 days of treatment with prednisolone and photoprotection, with residual post-inflammatory hyperpigmentation.

Figure 3: Facial photosensitive erythematous-to-violaceous scaly papules and plaques at baseline.

Figure 4: Clinical follow-up after 30 days showing resolution of the active cutaneous lesions with residual pigmentation.

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