Dermatology Reports
https://www.pagepress.org/journals/index.php/dr/index

eISSN 2036-7406

Please cite this article as: Mortato E, De Caro AP, Schinzari L, et al. Lichenoid dermatitis induced by abemaciclib in a patient with HR+/HER2- breast cancer. *Dermatol Rep 2024 [Epub Ahead of Print] doi: 10.4081/dr.2024.10144*

Submitted 22/09/24 - Accepted 17/11/24

Lichenoid dermatitis induced by abemaciclib in a patient with HR+/HER2- breast cancer

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Key words: abemaciclib; lichenoid dermatitis; HR+/HER2- breast cancer; cutaneous toxicity; CDK4/6 inhibitors.

Authors' contributions: EM, FA, have given substantial contributions to the conception or the design of the manuscript and to the acquisition, analysis and interpretation of the data; CF, supervised the drafting of the work. All authors contributed equally to drafting the manuscript and read and approved the final version of the manuscript.

Conflict of Interest: the authors declare no conflict of interest.

Funding: the authors report no sponsorship involvement in the research that could have influenced the outcome of this work.

Availability of data and materials: all data underlying the findings are fully available.

Ethics approval and consent to participate: no ethical committee approval was required for this case report by the Department, because this article does not contain any studies with human participants or animals. Informed consent was obtained from the patient included in this study.

Consent for publication: the patient gave her written consent to use his personal data for the publication of this case report and any accompanying images.

Abstract

Cyclin-dependent kinase (CDK) 4/6 inhibitors, such as palbociclib, ribociclib, and abemaciclib, are widely used in combination with endocrine therapy for the treatment of hormone receptor-positive (HR+), human epidermal growth factor receptor 2-negative (HER2-) breast cancer. Despite their efficacy, these drugs are associated with a range of adverse events, including dermatologic toxicities. This case report presents a rare instance of lichenoid dermatitis in a 48-year-old woman following treatment with abemaciclib. The patient developed erythematous, edematous plaques and papules on her hands and forearms, which resolved after discontinuation of the drug and treatment with topical corticosteroids. This report highlights the need for awareness of cutaneous side effects associated with CDK4/6 inhibitors, particularly abemaciclib.

Introduction

Cyclin-dependent kinase (CDK) 4/6 inhibitors, including palbociclib, ribociclib, and abemaciclib, have become integral components of therapy for patients with locally advanced or metastatic hormone receptor-positive (HR+), human epidermal growth factor receptor 2-negative (HER2-) breast cancer.[1-2] These agents are typically administered in combination with endocrine therapy and have been shown to significantly improve clinical outcomes. However, their use is often accompanied by a variety of adverse events (AEs), including hematologic, gastrointestinal,[3] a nd dermatologic toxicities.[4] Cutaneous reactions account for up to 15% of reported AEs associated with CDK4/6 inhibitors.[5] While many of these are non-specific, there are also reports of more distinctive dermatologic toxicities, such as vitiligo-like lesions, cutaneous lupus erythematosus, and leukocytoclastic vasculitis.[6] In this report, we present a case of drug-induced lichenoid dermatitis in a patient treated with abemaciclib, highlighting a rare dermatologic reaction associated with this medication. This case emphasizes the need for clinicians to remain vigilant regarding cutaneous side effects and to educate patients accordingly.

Case Report

A 48-year-old woman with HR+ breast cancer and a BRCA1 mutation was diagnosed with locally advanced disease in 2021. Her initial treatment consisted of neoadjuvant chemotherapy, followed by bilateral mastectomy with left axillary lymphadenectomy and subsequent radiation therapy. As part of her adjuvant therapy, she initiated abemaciclib (150 mg twice daily) in combination with letrozole in November 2022. Approximately five months into her therapy, in April 2023, the patient noticed erythematous skin lesions on the backs of both hands. The lesions were associated with discomfort but were not severe enough to warrant discontinuation of abemaciclib. The lesions gradually resolved upon discontinuing abemaciclib without any additional treatment. Therapy was resumed in June 2023, but the patient once again developed similar skin lesions, this time more extensive, affecting both hands and extending to the upper limbs. On physical examination, erythematous, edematous plaques with well-demarcated borders were observed on the dorsum of her hands (Figure 1). Additionally, erythematous papules with follicular hyperkeratosis were noted on the extensor surfaces of her forearms. Based on these findings, lichenoid dermatitis was suspected. Dermatoscopy of the lesions revealed a brownish background with brown dots and white crossing lines, consistent with lichenoid dermatitis. A biopsy of the lesion on the dorsum of the left hand confirmed the diagnosis, revealing parakeratosis, exocytosis, a chronic lymphomonocytic infiltrate with a lichenoid pattern, and occasional eosinophilic granulocytes (Figure 2). Given the

temporal association between the onset of the skin lesions and abemaciclib therapy, the patient was diagnosed with drug-induced lichenoid dermatitis. Following consultation with her oncologist, abemaciclib was discontinued in July 2023, and topical corticosteroids were prescribed. The skin lesions rapidly resolved with this treatment, and the patient did not experience any further cutaneous symptoms.

Discussion

CDK4/6 inhibitors, while highly effective in treating HR+/HER2- breast cancer, are known to be associated with a spectrum of adverse events, including cutaneous reactions.[4] The incidence of dermatologic toxicities related to CDK4/6 inhibitors has been estimated to be as high as 15%, with manifestations ranging from nonspecific rashes to more severe immune-mediated reactions.[5] In the literature, CDK4/6 inhibitors have been linked to cutaneous conditions such as maculopapular rash, pruritus, vitiligo-like lesions, and lupus erythematosus.[6] However, the dermatologic side effects specifically associated with abemaciclib are less frequently reported. To date, only one case of lichenoid interface dermatitis presenting as ashy dermatosis has been reported in association with ribociclib therapy.[7] This makes our report of abemaciclib-induced lichenoid dermatitis particularly noteworthy, as it adds to the limited literature on lichenoid reactions caused by CDK4/6 inhibitors. The mechanism behind these reactions is not fully understood, but it may involve immune dysregulation or direct effects on skin cells. This case underscores the importance of recognizing lichenoid dermatitis as a potential side effect of abemaciclib. Prompt diagnosis and management are crucial to avoid unnecessary interruption of cancer therapy. Clinicians should consider this diagnosis in patients receiving CDK4/6 inhibitors who develop erythematous, pruritic skin lesions and conduct appropriate diagnostic investigations, including biopsy and dermatoscopy.

Conclusions

This case report documents the first known instance of lichenoid dermatitis associated with abemaciclib therapy. Dermatologic toxicities, though less common with CDK4/6 inhibitors than other adverse events, are clinically significant and can impact a patient’s quality of life. Awareness of cutaneous reactions, particularly lichenoid dermatitis, in patients receiving abemaciclib is essential. Regular skin assessments and patient education on the potential for dermatologic side effects are recommended to ensure timely identification and treatment of these conditions. Proactive management can help optimize patient care and maintain the efficacy of cancer therapy.

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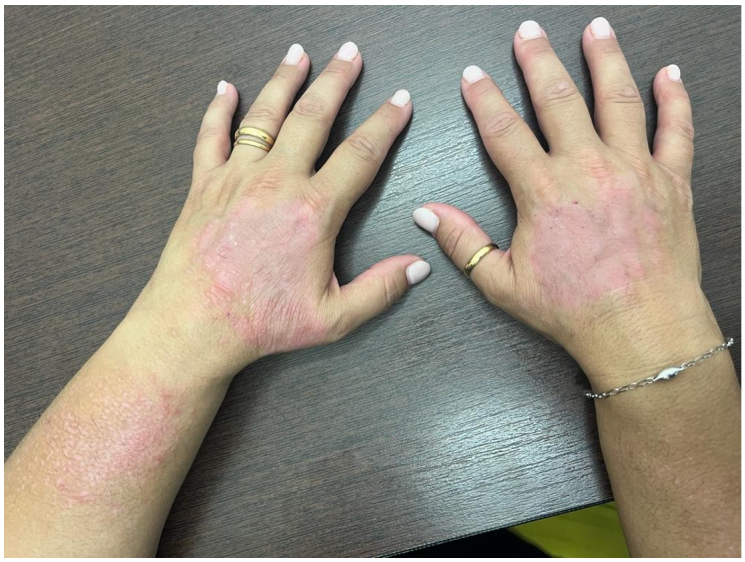

Figure 1. Erythematous edematous plaques on the dorsum of both hands, accompanied by erythematous papules with follicular hyperkeratosis on the extensor surfaces of the forearms.

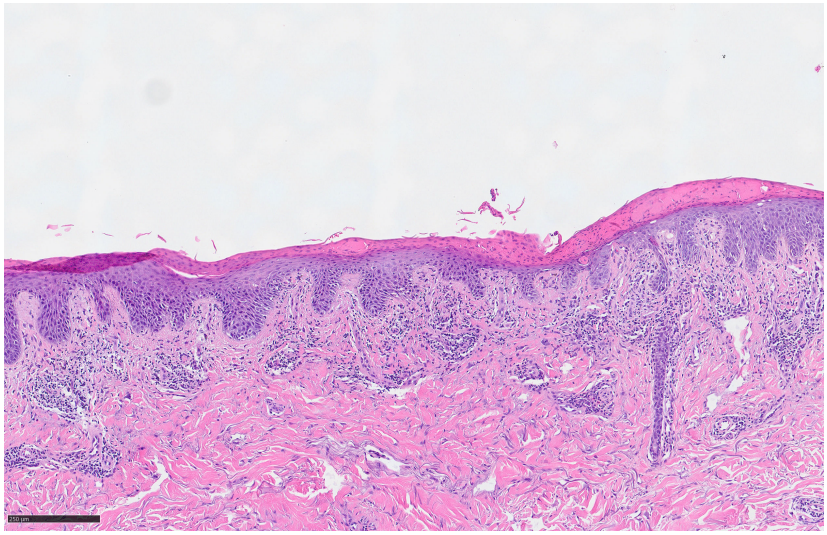

Figure 2. Histopathological exam demonstrated parakeratosis, exocytosis, and a chronic lymphomonocytic infiltrate with a lichenoid pattern.