

## Ribociclib Induced Photosensitive Skin Lesions

Dear Editor,

A 51-year-old woman was presented with itchy skin lesions over her face, chest, and dorsum of hand and feet for the last 12 days. It was insidious in onset, gradually progressive with no history suggestive of photosensitivity. No systemic complaints were noted by the patient. Also, she did not give a history of similar lesions in the past. On mucocutaneous examination, the erythematous confluent plaques showed a clear photosensitive distribution involving the face, chest, upper back, extensors of forearm, and dorsum of hands and feet [Figure 1]. The lesion over the face showed a distinct sparing of the eyelids, nasolabial fold, and posterior surface of the ear. These plaques had a smooth surface with no secondary surface changes. In the past history, the patient was a known case of metastatic breast cancer with positive estrogen receptors. She was started on tablet ribociclib 600 mg once a day and tablet letrozole 2.5 mg once a day. The rash started within 7 days of starting this therapy. On temporal correlation, we considered a diagnosis of ribociclib induced photosensitive rash, and the patient was advised to apply topical corticosteroids along with photoprotection. Skin biopsy and photopatch testing could not be done due to the newly imposed covid out-patient restrictions. Ribociclib was discontinued while letrozole was continued. A significant improvement was seen within two weeks and the lesions resolved with thin whitish scaling [Figure 2].

Ribociclib is an orally available cyclin-dependent kinase inhibitor used as first line therapy in metastatic breast cancer. In metanalysis evaluating toxicity end points of

CDK4/6 inhibitors, although rash was mentioned as a side effect, further details on the type of rash were not available.<sup>[1]</sup> In another phase I trial performed to determine dose-limiting toxicity and maximum tolerated dose of ribociclib done in 21 patients, grade 1-2 rash was seen in 11 (52%) patients along with oral mucositis, but yet again further details on rash were not available.<sup>[2]</sup> There are, however, few case reports of CDK 4/6 inhibitors induced subacute lupus erythematosus presenting as well-defined erythematous annular scaly plaques over the chest and upper back.<sup>[3,4]</sup> Another reported manifestation is ribociclib-induced erythema dyschromicum perstans -like pigmentation presenting as slate-gray hyperpigmentation of the photo exposed skin.<sup>[5]</sup> Both the diagnoses were clinically ruled out because of a different clinical presentation in our patient. Our patient had probable/likely adverse events as per the WHO-UMC causality assessment scale and possible by Najaranjo's adverse drug reaction scale. As per common terminology for adverse events, the rash in our patient was of moderate or grade 2 severity.

Letrozole is an aromatase inhibitor and is known to have cutaneous side effects. In phase 2 randomized study in postmenopausal women with breast cancer, receiving letrozole, skin rash was noted as a side effect in 23 out of 125 (18.4%) patients. The type of skin lesions was described as exfoliative, nodular, follicular, generalized, maculo-papular, and others.<sup>[6]</sup> In our patient, the rash subsided while the patient was continuing letrozole which makes it less likely a causative agent.

The mechanism of ribociclib induced photosensitive rash is likely photoallergic as the rash occurred after a



Figure 1: Erythematous confluent plaque over the chest in a strict photosensitive distribution



Figure 2: Resolution of back lesions with hyperpigmentation and scaling within 1 week of discontinuation of ribociclib

few days of starting the drug, was gradually progressive, and clinically appeared to have contact dermatitis like picture.<sup>[7]</sup> In photoallergic dermatitis, the drug converts into an immunologically active compound upon ultraviolet radiation absorption and interacts photochemically with a carrier protein to become a complete antigen which initiates the induction phase of delayed hypersensitivity response. On subsequent exposure, an inflammatory response identical to allergic contact dermatitis was produced. Other drugs known to cause photoallergic dermatitis include phenothiazines, chlorpromazine, sulfa-derived products, and NSAIDs.

Thus, photoallergic dermatitis is a rare side effect of ribociclib and strict photoprotection should be advised in these patients while prescribing this medication.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

**Vaishnavi Verma, Neetu Bhari**

*Department of Dermatology, AIIMS, New Delhi, India*

*Address for correspondence:*

*Dr. Neetu Bhari,*


*All India Institute of Medical Sciences, New Delhi, India.*

*E-mail: drntbhari@gmail.com*

### References

- Costa R, Costa RB, Talamantes SM, Helenowski I, Peterson J, Kaplan J, *et al.* Meta-analysis of selected toxicity endpoints of CDK4/6 inhibitors: Palbociclib and ribociclib. *Breast* 2017;35:1-7.
- Seront E, Schmitz S, Papier M, van Maanen A, Henry S, Lonchay C, *et al.* Phase 1 study evaluating the association of the cyclin-dependent kinase 4/6 inhibitor ribociclib and cetuximab in recurrent/metastatic p16-negative squamous cell carcinoma of the head and neck. *Front Oncol* 2019;9:155.
- Kurtyka DJ, Mohebbi AD, Burke KT, Cardis MA. Subacute cutaneous lupus erythematosus following abemaciclib therapy for metastatic breast cancer. *JAAD* 2021;14:10-2.
- Pinard J, Patel M, Granter SR, Vleugels RA, Merola JF. Subacute cutaneous lupus erythematosus induced by palbociclib. *J Cutan Med Surg* 2018;22:341-3.
- Mariano M, Donati P, Cameli N, Pigliacelli F, Morrone A, Cristaudo A. Ribociclib-induced erythema dyschromicum perstans (Ashy dermatosis)-Like pigmentation in a metastatic breast cancer patient. *J Breast Cancer* 2020;24:117-21.
- Mayer IA, Prat A, Egle D, Blau S, Alejandro Pérez Fidalgo J, Gnant M, *et al.* A phase II randomized study of neoadjuvant letrozole plus alpelisib for hormone receptor-positive, human epidermal growth factor receptor 2-negative breast cancer (NEO-ORB). *Clin Cancer Res* 2019;25:2975-87.
- González E, González S. Drug photosensitivity, idiopathic photodermatoses, and sunscreens. *J Am Acad Dermatol* 1996;35:871-85.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online	
<b>Website:</b> www.idoj.in	<b>Quick Response Code</b> 
<b>DOI:</b> 10.4103/idoj.idoj_99_22	

**How to cite this article:** Verma V, Bhari N. Ribociclib induced photosensitive skin lesions. *Indian Dermatol Online J* 2023;14:105-6.

**Received:** 13-Feb-2022. **Revised:** 25-Mar-2022.

**Accepted:** 07-Apr-2022. **Published:** 18-Jul-2022.

© 2022 Indian Dermatology Online Journal | Published by Wolters Kluwer - Medknow