A Rare Case Report of Photosensitivity in Non-Hodgkin’s Lymphoma Treated with Lenalidomide

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Sir,

Lenalidomide is a 4-amino-glutarimide derivative of thalidomide that has an immunomodulatory and antitumoral effect. It is a useful therapeutic agent for multiple myeloma and myelodysplastic syndromes and has also been tried in acute and chronic lymphocytic leukemia, relapsed or refractory Hodgkin’s lymphoma, T-cell non-Hodgkin’s lymphoma (NHL), prostate cancer, non-small cell lung cancer, malignant melanoma, renal cancer, and advanced ovarian and peritoneal carcinoma.[1]

A 60-year-old male, a known case of NHL for 3 years, was treated with 6 cycles of cyclophosphamide, hydroxydaunorubicin synonym doxorubicin, oncovin synonym vincristine and prednisolone (CHOP) every 21 days followed by 6 cycles of ifosfamide and etoposide (I + E) every 21 days. After that, the patient was started on tab lenalidomide at a daily dose of 10 mg. Twenty days after the initiation of lenalidomide, he complained of a reddish raised rash over face, trunk, and extremities [Figure 1]. Skin-coloured nodules and plaques were present over posterior aspect of right leg [Figure 2]. Rest of the cutaneous examination was normal. General examination was normal except for inguinal lymphadenopathy. The systemic examination was normal. His hemoglobin was 7 g% and peripheral smear revealed atypical lymphocytes. Histopathology from erythematous scaly plaque over extensor aspect of right forearm was done. The epidermis revealed mild acanthosis, spongiosis with formation of spongiotic vesicle and perivascular lymphocytic infiltrate in upper dermis [Figure 3]. These findings were suggestive of photosensitive dermatitis.

Lenalidomide treatment was interrupted and the patient showed significant resolution of symptoms in the form of diminution of erythema and scaling after 2 weeks of treatment with oral prednisolone, antihistamines and broad-spectrum sunscreen [Figure 4]. The patient was lost to follow-up after 2 weeks. Considering the history, clinical features, and histopathology, a diagnosis of lenalidomide-induced photosensitive rash was made. This case was reported to Pharmacovigilance Programme of India (PvPI) (Report no. 2019/24027).

Based on the World Health Organization (WHO) Uppsala Monitoring Center (UMC) scale, photosensitivity because of lenalidomide was considered as probable adverse drug reaction.

Based on Schumock and Thornton preventability scale, our patient had a definitive preventable type of adverse drug reaction.[2]

Lenalidomide acts by inhibition of angiogenesis, downregulation of tumor necrosis factor-alpha (TNF-α), inhibition of cyclooxygenase-2 (COX-2), and enhanced activation of cytotoxic (CD8) T-cells. With increased production of interleukin (IL) 27 and stimulation of natural killer (NK) and dendritic cell function, it stimulates T-cell proliferation and the production of IL-2 and IL-10; inhibits IL-1b and IL-6; and modulates IL-12 production.[3] Lenalidomide is more effective having fewer side effects than thalidomide. It does not produce polyneuropathy, constipation, or drowsiness. The most frequent side effects are myelosuppression, pulmonary embolism, gastrointestinal (GI) alterations, and atrial fibrillation. The skin-related side effects appear with a frequency between 12% to 43%.[1] The dermatological side effects that have been reported are morbilliform...
rash, urticarial rash, folliculitis, leukocytoclastic vasculitis, Stevens–Johnson syndrome, and paronychia but the most common side effect was reported as morbilliform rash. These side effects have been reported normally during the first month of treatment. These side effects have been treated with topical or oral corticosteroids, antihistamines, sunscreens, temporary discontinuation, and a desensitization scheme. Lee et al. proposed a desensitization scheme for lenalidomide as progressive increase in doses and frequency to reach a target dose of 10 mg/day over the course of 6 weeks.

Till now, only one case of lenalidomide-induced photosensitivity has been reported in the literature, by Perez-Paredes et al., in which a patient with myelodysplastic syndrome developed photosensitivity after 10 days of lenalidomide at the dose of 10 mg/day. Dermatological adverse drug reactions to lenalidomide can be prevented by various measures, such as sun avoidance, especially during peak daylight hours, and the use of sun-protective clothing and broad-spectrum sunscreens.

We, hereby, report this case of photosensitivity in the patient of NHL because of paucity of literature from India. This case is reported to create awareness regarding lenalidomide-induced photosensitivity.

**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.

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**Conflicts of interest**
There are no conflicts of interest.

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