

Lenalidomide-induced Interstitial Pneumonitis

Sir,

Lenalidomide is approved for the treatment of multiple myeloma (MM) in both upfront therapy and relapsed disease.¹ Although cytopenias and infectious complications are well documented, cases of acute pulmonary toxicity following treatment with lenalidomide, have been rarely reported in the literature.

A 40-year man was diagnosed with MM producing immunoglobulin G (IgG) kappa in July 2012. Treatment using the CyBorD protocol (VCD) for nine cycles showed a good partial response. He underwent vertebroplasty of L2-L3 and received autologous haematopoietic stem cell transplantation (HSCT) in January 2013. Thereafter, maintenance therapy with bortezomib was administered. Initially, he tolerated bortezomib well; however, with continuing therapy, he developed peripheral neuropathy, grade II. Therefore, lenalidomide, 10 mg once daily, was administered for 21 days of a 28-day treatment cycle, which was tolerated well, without any major side effects. In November 2015, he presented to the clinic with one-week history of persistent dry cough and worsening dyspnoea. On examination, he was afebrile and dyspnoeic at rest with 86% oxygen saturation at room air, which increased to 98% with 3 L/min of oxygen. Chest auscultation revealed bibasilar dry crackles. Laboratory tests revealed white blood cell count of $3,900 \times 10^6/L$ with neutrophils, 70%; lymphocytes, 17%; monocytes, 9%; eosinophils, 3%; haemoglobin, 10.2 g/dL; and platelet count, $202,000 \times 10^6/L$. Chest radiograph showed normal lung volumes with lower lobe atelectasis. Echocardiography demonstrated normal ejection fraction and normal valvular structures. The patient was hospitalised, and high resolution chest computed tomography (CT) revealed extensive bilateral ground-glass opacities involving both lower lobes of the lungs. The patient was examined by the Pulmonology Department, and bronchoscopy was done. Broncho-alveolar lavage was negative for bacteria, fungi, and acid-fast bacilli, and the serological viral screening for H1N1 and corona viruses was normal. After ruling out infections, drug-induced interstitial pneumonitis was considered. Lenalidomide was discontinued, and the patient was treated with a corticosteroid for 2 weeks, which was later tapered and discontinued. He was discharged from the hospital after 1 week with marked improvement in symptoms. He was in a stable medical condition with a near complete resolution of all chest radiographic abnormalities on follow-up 3 weeks after discharge.

Antineoplastic medications can cause lung injuries, including interstitial lung disease, alveolar haemorrhage, and vasculitis.² Usually, pulmonary toxicities are reversible on

early diagnosis and discontinuation of the offending drugs.³ Antineoplastic agents known to cause pulmonary injury include busulfan, bleomycin, hydroxyurea, imatinib, and anagrelide.^{4,5} Pulmonary toxicity is an uncommon complication in patients being treated for MM. Patients administered thalidomide may present with dyspnoea, and acute pulmonary toxicity has been reported with bortezomib; however, these cases are rare.⁶

Our patient was diagnosed with interstitial pneumonitis secondary to lenalidomide toxicity, and he responded well to antibiotics and short course of steroids with cessation of therapy. However, transbronchial biopsy was not performed owing to the clinical condition of the patient. High resolution CT chest demonstrates high sensitivity and specificity for diagnosis of pulmonary fibrosis.

CONFLICT OF INTEREST:

All authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:

AS: Identification of the case with data collection and manuscript writing.

JUR: Data collection with manuscript writing and correspondence.

AN: Manuscript writing with grammatical correction and pharmacological expertise.

NIA: Manuscript writing and review.

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