Pomalyst Induced Pneumonitis; A Breeding Ground for Fungi

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Case Presentation

An 84 year old gentleman with a past medical history significant of multiple myeloma status post stem cell transplant, squamous cell carcinoma of the back vertebrae, malignant melanoma, idiopathic neuropathy, hyperlipidemia, essential hypertension, and prostate cancer presents with worsening shortness of breath. It started 5 weeks ago and it has gotten progressively worse. Does not use supplemental oxygen at baseline.

Placed on Zosyn 3.375 grams IV q. 8 hours due to risk factors for resisting gram-negative organisms as well as Solu-Medrol 40 mg IV q. 8 hours for possible inflammatory component to his pneumonia. Sputum culture, urine Legionella, urine Step, and blood cultures returned negative. He was ready for discharge with Dexamethasone 60 mg a day with weekly titration. Pomalyst was discontinued. His goal was to complete an additional 7 day course of bactrim.

One of the tests pending upon discharge was the Fungitell. Unfortunately the next day, the send out test returned with 1,3 Beta-D-Glucan >500.

Less than 31 pg/mL ..... Negative
31-59 pg/mL ..... Negative
60-79 pg/mL ..... Indeterminate
Greater than or equal to 80 pg/mL .... Positive

Three days after discharge, he returned with the same shortness of breath. He started on Voriconazole, continued on the rest of his Bactrim, and added on Acyclovir. A repeat Fungitell confirmed the suspicion of fungal pneumonia with another positive >500 result.
In the month that followed, his breathing improved. He continued with tapering of the steroids over the next month, he completed his course of Voriconazole and Acyclovir. Prophylactic Bactrim during the duration of steroids.

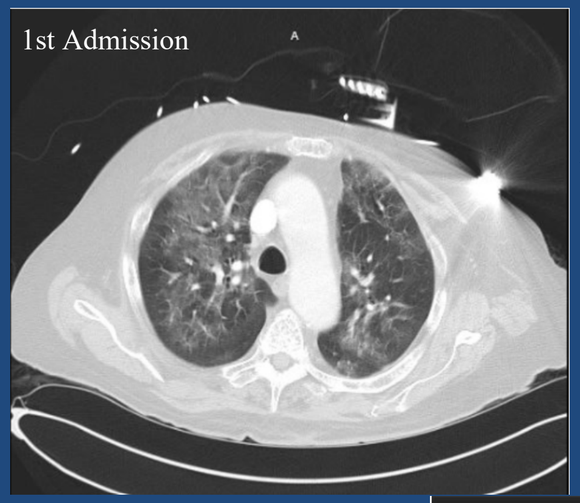
Introduction

Pomalidomide, a thalidomide derivative, is antiangiogenic and also acts as an immunomodulator. Indicated to treat multiple myeloma, this drug has been reported to cause acute pulmonary toxicity.

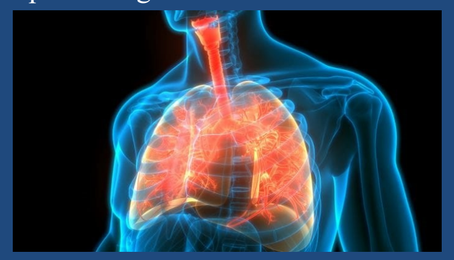
Drug-induced interstitial lung disease (DILD) is characterized by hypoxemia on arterial blood gas analysis, diffuse ground-glass opacities with patchy consolidation on CT, and improvement following discontinuation.

Pomalidomide-induced pulmonary toxicity is extremely rare; only five cases have been cited to date. Similar to other forms of DILD,

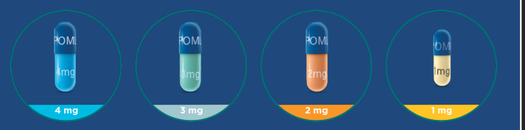
Early awareness and discontinuation decreases opportunistic infections.



CT Chest with IV Contrast on First Admission showing bilateral opacities representing infiltrates Versus

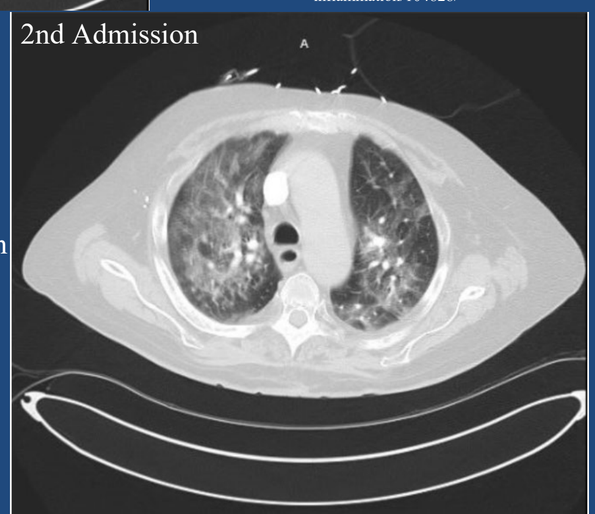


Idiopathic Lung Inflammation Depiction
https://www.healtheuropa.eu/five-minute-screening-for-lung-inflammation/104828/



Pomalyst Medication Pills
https://pomalysthcp.com/pom-dex/dose-modifications/

CT Chest with IV Contrast on Second Admission showing worsened bilateral Opacities representing infiltrates and likely pneumonia. Cannot rule out COVID pneumonia



Discussion

Our patient was on pomalidomide, daratumumab, and dexamethasone combination therapy for multiple myeloma. He was on day 14 of 21 of his chemotherapy regimen, after consulting hematology/oncology pomalidomide was decreased in dose from 4 mg to 3 mg initially without any symptomatic relief. Patient was treated for COPD and the community acquired pneumonia initially. After recurrent respiratory complaints and multiple readmissions for the same complaints, Pomalidomide was held and the patient was continued on supplemental oxygen and Solu-medrol showing some relief in symptoms.

Pomalidomide is a derivative of thalidomide which is an anti-angiogenic agent that acts as an immunomodulator. This medication has been used for relapsed or refractory multiple myeloma. A rare adverse effect of Pomalidomide is acute pulmonary toxicity. Patients may present with symptoms of shortness of breath, fevers, or hypoxia. Imaging may show bilateral ground-glass opacities on CT scan which can represent infectious vs inflammatory etiologies. Sometimes this can be mistaken for an infectious etiology, and is mostly a diagnosis of exclusion. Treatment usually involves stopping the therapy and some cases were treated with corticosteroids.

References

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- Gajic S, Callahan EC, Brown JK, Elicker B, Ley B, Blanc PD. Pulmonary toxicity associated with pomalidomide. Int J Tuberc Lung Dis. 2018 Nov 1;22(11):1383-1386. doi: 10.5588/ijtld.18.0244. PMID: 30355421.
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