Pneumocystis Carinii Pneumonia: A Rare Cause of Granulomatous Hypercalcemia

Swati Kumar  
*Henry Ford Health System*

Mahalakshmi Honasoge  
*Henry Ford Health System*

Arti Bhan  
*Henry Ford Health System*

Anita Patel  
*Henry Ford Health System*

Adarsh Babu  
*Henry Ford Health System*

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Pneumocystis Carinii Pneumonia: A Rare Cause of Granulomatous Hypercalcemia
Swati Kumar, M.D., Mahalakshmi Honasoge, M.D., Arti Bhan, M.D., Anita Patel, M.D., Adarsh Babu, M.D.

Abstract

• Pneumocystis Carinii Pneumonia (PCP) is a well-known complication of immunosuppression.

• Few case reports have linked PCP and its ability to induce a granulomatous response to hypercalcemia.

• PCP-related hypercalcemia appears to be resistant to standard therapy.

• We report a case of hypercalcemia that preceded PCP and continued to worsen during the course of infection.

Case Report

• A 63y man with renal transplant for polycystic kidney disease one year prior, presented with three week history of fatigue, cough and chills.

• Patient was hypoxic and CT of the thorax revealed diffuse ground glass opacities.

• He was started on empiric therapy for PCP with intravenous methylprednisolone, clindamycin, and primaquine.

• The patient’s bronchoalveolar lavage confirmed PCP.

Laboratory Values

• Serum calcium levels improved transiently but subsequently rose to a peak level of 13.5 mg/dl.

• Ketoconazole 200 mg every 8hrs was started to reduce 1,25D production.

• Serum calcium remained high despite a reduction in 1,25D level (33 pg/ml).

• Bisphosphonates therapy was considered unsafe because of decreased GFR. Therefore, Denosumab 30mg was administered, which resulted in decrease in serum calcium level to 10.3 mg/dl by day 19.

• Overall, improvement of hypercalcemia correlated with improvement of PCP and renal function.

• Patient was discharged home after completing the 21 day course of treatment for PCP.

• Five weeks later, serum calcium stayed normal with an elevated PTH of 153 pg/ml and 1,25D level of 20 pg/ml.

• Hypercalcemia heralding PCP infection has been reported in the literature.

• Elevated calcium of 10.6 mg/dl was present one month prior to our patient’s hospitalization around the time of onset of his symptoms.

• Of the 19 cases of hypercalcemia due to PCP infection, 5 had hypercalcemia that preceded PCP infection by few weeks.

• The gold standard for diagnosis of PCP involves identification of the organism in induced sputum or bronchoalveolar lavage specimen.

• Measurement of serum 1,3-β-d-Glucan, which has high sensitivity, may be used as a screening tool in the right clinical setting such as our patient with immunosuppression and hypercalcemia to diagnose PCP at an earlier stage.

• We believe that hypercalcemia in a patient with immunosuppression should alert the possibility of PCP infection.

References


