# Diffuse Lung Disease

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## FINDING BAL EOSINOPHILIA IN DESQUAMATIVE INTERSTITIAL PNEUMONIA

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**INTRODUCTION:** Desquamative interstitial pneumonia (DIP) is a smoking-associated interstitial pneumonia, characterized by the accumulation of alveolar macrophages in alveolar lumens. DIP mostly occurs in male (40-50 years)[1].

**CASE PRESENTATION:** A 50-years-old man was seen in the outpatient visit of the University Hospital of Ferrara on March 2023. Former smoker (quit on 2005; 21 packs/year), turner (exposed for twenty years to emulsifying oils). The patient complained of cough persisting for three months. The high resolution (HR)CT-chest revealed diffuse ground-glass opacities at both lung bases and severe centrilobular emphysema to the upper lung lobes (Fig1). Serology for connective tissue disease was negative; alpha-1-antitrypsin was within the normal range. Pulmonary function tests showed normal lung volumes with a reduction of diffusing capacity (DLCO 46% of predicted value). Bronchoalveolar lavage fluid (BAL) cell count revealed 35% eosinophils, 20% lymphocytes and 25% macrophages. The blood eosinophil counts as normal. A diagnosis of acute eosinophilic pneumonia (AEP) was made and oral steroid therapy was prescribed for 6 months (prednisone 0.5 mg/kg halving the dose every two weeks). In October 2023 the patient reported that he had been taking oral corticosteroids only for 3 months due to misunderstanding of the medical prescription. On September 2023 ground-glass progression was detected, with the appearance of bilateral parenchymal consolidation and cysts (Fig2) with further decline in DLCO (40% pred). Based on the imaging we concluded for DIP. Oral steroid therapy was prescribed, prednisone 0.5 mg/kg for one month, with slow decalage (dose halved every 30 days) for 6 months. A HRCT-chest on March 2024 reported complete cleansing of the consolidative areas, with stability of the ground-glass (Fig3); DLCO improved (50% pred). Oral corticosteroids were maintained (10 mg/day) until next chest CT control (additional 6 months).

**DISCUSSION:** Few cases have been reported in the literature of BAL eosinophilia in DIP [2]. BAL cell count usually contains less than 1% eosinophils; BAL eosinophils cell counts higher than 5% have been observed in several diseases: AEP, chronic eosinophilic pneumonia (CEP) [3]. CEP can sometimes show the histologic features of DIP, such as the accumulation of macrophages in the alveolar spaces; usually, CEP patients have bronchial asthma, fever and moving infiltrating shadows (absent in the case here described)[4].

**CONCLUSIONS:** DIP can present with BAL eosinophilia. It is interesting that the BAL in the present case did not show an increased percentage of macrophages (which were numerous in the alveolar spaces) [5]. A careful follow-up in DIP is necessary to evaluate the fibrosing evolution. In conclusion, BAL eosinophilia can be regarded as one of the findings of DIP.

**REFERENCE #1:** [1] Ozlem Ercen Diken, Aysun Sengul, Ayse Coskun Beyan et al. Desquamative interstitial pneumonia: risk factors, laboratory and bronchoalveolar lavage findings, radiological and histopathological examination, clinical features, treatment and prognosis. Experimental and therapeutic medicine 2019; 17: 587-595.

**REFERENCE #2:** [2] M Kubo, T Koshino, H Shimizu et al. A case of desquamative interstitial pneumonia with increased numbers of eosinophils in the bronchoalveolar lavage fluid 1997; 35(10): 1084-92.

**REFERENCE #3:** [3] Takashi Ishiguro, Noboru Takayanagi, Kazuyoshi Kurashima et al. Desquamative Interstitial Pneumonia with a Remarkable Increase in the Number of BAL Eosinophils. Internal Medicine 2008; 47: 779-784. [4] Kawabata Y, Takemura T, Hebisawa A et al. Eosinophilia in bronchoalveolar lavage fluid and architectural destruction are features of desquamative interstitial pneumonia. Histopathology 2008; 52: 194-202. [5] Carrington CB, Gaensler EA, Coutu RE et al. Natural history and treated course of usual and desquamative interstitial pneumonia. N Eng J Med 1978; 298: 801-809.

**DISCLOSURES:**

No relevant relationships by Aldo Carnevale

No relevant relationships by Ilaria Gatti

No relevant relationships by Lorenzo Pasquale Lombardo

No relevant relationships by Brunilda Marku

No relevant relationships by Andrea Messina

Scientific Medical Advisor relationship with CHIESI, AZ, GSK, SANOFI, AVILLION, ROCHE Please note: 24 months Added 03/25/2024 by Alberto Papi, value=Consulting fee

Speaker/Speaker's Bureau relationship with CHIESI, ASTRAZENECA, GSK, MENARINI, Mundipharma, ZAMBON, Sanofi Please note: 24 months Added 03/25/2024 by Alberto Papi, value=Honoraria

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