

Reversible interstitial lung disease following treatment of atopic dermatitis with mycophenolate mofetil

T. J. Tull,¹ T. Toma² and H. P. Menagé¹

Departments of ¹Dermatology; and ²Respiratory Medicine, Lewisham and Greenwich NHS Trust, London, UK

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A 37-year-old woman with severe atopic dermatitis, was commenced on mycophenolate mofetil (MMF). Over the preceding 5 years she had been managed in our unit and treated with phototherapy, ciclosporin and azathioprine. MMF was started at an initial dose of 500 mg daily, and increased to 1 g twice daily with good clinical effect. However, 18 months into this treatment, the patient was noted to be short of breath with a dry cough and pleuritic chest pain. Serum autoimmune screen, hepatitis and human immunodeficiency virus serology were unremarkable, as were routine haematology and biochemistry. Serum IgA was slightly elevated at 3.8 g/L (normal range 0.6–3.10 g/L) but IgG and IgM were within the normal range.

The patient was treated with oral amoxicillin 1 g three times daily and clarithromycin 500 mg twice daily.

High-resolution computed tomography (CT) of the chest revealed bilateral ground-glass opacification, consistent with interstitial lung disease (Fig. 1). CT–pulmonary angiography demonstrated no evidence of pulmonary embolism.

The patient was too hypoxic to undergo bronchoscopy. A lung biopsy was therefore taken using video-assisted thoracoscopic surgery. Histological examination revealed diffuse homogeneous expansion of the interstitium, with an infiltrate of lymphocytes and histiocytes. No granulomas or viral inclusion bodies were seen, and stains for acid-fast bacilli and *Pneumocystis jirovecii* were negative. Tissue culture from the specimen was negative, as were blood culture and serum precipitins. Owing to a dry cough, sputum was unobtainable, despite physiotherapy.

These findings were consistent with a cellular non-specific interstitial pneumonia (NSIP), with MMF being the likely cause.

MMF was immediately discontinued and the patient was commenced on prednisolone 40 mg daily, slowly reducing over 6 months. Her shortness of breath and exercise tolerance improved, along with the lung function test indices and the appearance on chest radiographs. She remains well and currently has a normal exercise tolerance.

MMF is licensed in combination with other immunosuppressants for the prevention of rejection following allogeneic renal, heart and hepatic transplants. It is used off-licence as a steroid-sparing agent in the management of resistant atopic dermatitis, immunobullous disorders, connective tissue diseases, vasculitides and graft-versus-host disease. Rapid onset

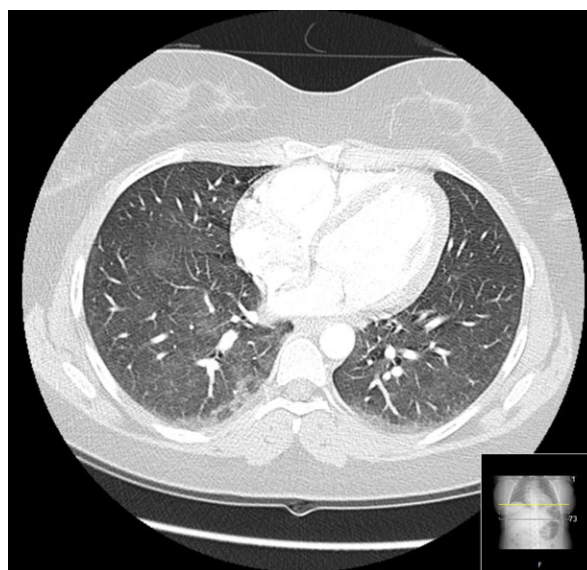


Figure 1 High-resolution computed tomography of the chest demonstrating ground-glass opacification, consistent with interstitial lung disease.

Correspondence: Dr Thomas Tull, Dermatology Department, Lewisham Hospital, Lewisham High Street, London SE13 6LH, UK
E-mail: tom25@doctors.org.uk

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and relative lack of toxicity make MMF a valuable treatment for these conditions. Common adverse effects (AEs) include gastrointestinal disturbance, myelosuppression and increased susceptibility to infection. Interstitial lung disease is a rare AE, and has been reported following solid organ transplants.^{1,2}

A recent drug safety update from the Medicines and Healthcare Products Regulatory Agency (MHRA) drew attention to the risk of hypogammaglobulinaemia and bronchiectasis associated with MMF when used in combination with other immunosuppressants.³ The MRHA recommends measurement of serum immunoglobulins in patients with recurrent infections, and consideration of bronchiectasis or pulmonary fibrosis if cough or dyspnoea is reported.

We believe that the temporal relationship, negative cultures and improvement with oral prednisolone suggest MMF-induced interstitial lung disease in our patient, although an atypical infection cannot be entirely excluded. MMF has been reported to result in NSIP in transplant patients, but to our knowledge, this is the first case described in a patient with atopic dermatitis. We report this case to remind dermatologists

of this rare but serious AE, and to highlight the recent MRHA warning regarding bronchiectasis and hypogammaglobulinaemia. Dermatologists prescribing MMF, especially in combination with other immunosuppressants, should be vigilant and screen their patients appropriately.

References

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