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Ocrelizumab-associated organising pneumonia in a patient with multiple sclerosis: case report

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Introduction: Ocrelizumab is a humanised anti-CD20 monoclonal antibody used in the treatment of multiple sclerosis (MS) by targeting B-cells to reduce autoimmune demyelination. It is generally well tolerated, although rare pulmonary toxicities, including interstitial lung disease and organising pneumonia (OP) have been reported. Migratory ground-glass opacities and consolidations are common radiological features in OP, with systemic symptoms such as fever. Drug-induced OP should be suspected when infectious and autoimmune causes are excluded, and radiological abnormalities improve after drug withdrawal.

Case description: A 51-year-old man with MS treated with ocrelizumab presented with recurrent fever up to 39°C since 8 weeks and night sweats, without cough nor dyspnea. Chest computed tomography scan revealed diffuse ground-glass opacities mainly in the upper lobes. Fever recurred despite antibiotic treatment and low-dose glucocorticosteroids. Laboratory investigations revealed elevated C-reactive protein with procalcitonin level within normal range, normocytic anaemia, and elevated liver enzymes. High-resolution computed tomography (HRCT) demonstrated migratory peripheral ground-glass opacities with consolidations, reverse halo sign, and air bronchograms, which may be compatible with OP. Autoimmune serology (antinuclear antibodies, anti-neutrophilic cytoplasmic autoantibodies, anti-cyclic citrullinated peptide antibodies) and viral tests (cytomegalovirus, Epstein-Barr virus) were negative. Pulmonary function tests found normal lung volumes and low diffusing capacity of lung for carbon monoxide (DLCO, 55% predicted). Bronchoalveolar lavage cultures excluded bacterial, viral, and fungal infections. Ocrelizumab therapy was stopped. Three months after cessation on ocrelizumab, HRCT confirmed almost complete resolution of pulmonary infiltrates and improvement in DLCO (67% predicted). No different etiological mechanism was detected, and MS remained clinically stable.

Conclusions: This case highlights the importance of maintaining a high index of suspicion for drug-induced pulmonary toxicity in patients receiving anti-CD20. Although ocrelizumab is generally well tolerated, awareness of rare but potentially reversible complications such as OP is essential to ensure prompt diagnosis, appropriate management, and favourable clinical outcomes.