Novel use of rituximab in hypersensitivity pneumonitis refractory to conventional treatment

Hypersensitivity pneumonitis (HP) is treated by removal of the inciting antigen, if identified, and with corticosteroids and immunosuppressive agents in extensive or progressive disease. A minority of patients continue to decline and suffer outcomes comparable to idiopathic pulmonary fibrosis. Rituximab, a B cell depleting anti-CD20 antibody, has shown benefit in interstitial lung diseases (ILDs) associated with connective tissue diseases (CTDs). We report a novel use of rituximab in a case of HP refractory to conventional treatment.

A 57-year-old female never-smoker, with no previous medical history, presented with a 6-month history of progressive breathlessness and dry cough. Pulmonary function tests (PFTs) were impaired, with 26% of diffusing capacity for carbon monoxide (DLco) and 44% of forced vital capacity (FVC). A high-resolution CT (HRCT) showed changes suggestive of HP (figure 1A). A surgical lung biopsy disclosed chronic bronchocentric inflammation, poorly formed non-necrotising granulomas and mild fibrosis (figure 1B). Immunohistochemistry showed scattered CD20 follicular aggregates on a background of CD3 T cells. A causative exposure was not identified on clinical history, precipitin screening tests were negative and features of a CTD were absent. HP was diagnosed with high confidence by multidisciplinary consensus. Oral prednisolone was commenced, tapering from 40 mg daily to maintenance 20 mg daily over 2 weeks. Following continued deterioration over the next 4 months, three 500 mg doses of intravenous methylprednisolone were administered weekly, followed by six 3-weekly doses of intravenous cyclophosphamide (600 mg/m² of body surface area).

Twelve months after presentation, and despite vigorous immunosuppressant treatment, PFTs had further worsened DLco and FVC, reaching a nadir of 17% and 37%, respectively. Exercise tolerance was...
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