

Anti-glomerular basement membrane glomerulonephritis with thrombotic microangiopathy lesions

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Abstract

Introduction: Anti-glomerular basement membrane (anti-GBM) disease is a rare small vessel vasculitis responsible for a pneumorenal syndrome. Renal histology typically shows extracapillary proliferation. We report the case of a patient diagnosed with anti-GBM glomerulonephritis with advanced lesions of thrombotic microangiopathy.

Observation: A 23-year-old patient with a daily cannabis consumption habit and occasional alcohol use, presented with a pneumorenal syndrome. The patient experienced a large hemoptysis, confirmed by bronchoscopy and analysis of bronchoalveolar lavage fluid, with a GOLD score of 200. There was a rapid deterioration in renal function, with creatinine levels rising from 100 $\mu\text{mol/l}$ to 222 $\mu\text{mol/l}$ in a few days, accompanied by an active urinary sediment and significant hematuria (three crosses). Laboratory tests revealed severe hemolytic anemia with an initial hemoglobin level of 4 g/dL, elevated LDH levels at 400, necessitating a transfusion. Thrombocytopenia was also confirmed, with a platelet count of 63,000.

The diagnosis of anti-GBM disease was supported by the presence of anti-GBM antibodies and lesions consistent with this condition on renal biopsy: An extracapillary glomerulonephritis with linear deposits of IgG along the glomerular capillaries on immunofluorescence. However, the biopsy also revealed thrombotic microangiopathy (TMA) lesions. The patient received 3 boluses of Solu-Medrol followed by full-dose corticosteroid therapy at 1 mg/kg/day for 30 days, with a gradual tapering thereafter. The patient also underwent 6 courses of Endoxan and 14 sessions of plasmapheresis. He had ceased cannabis use but continued occasional tobacco consumption.

This therapeutic approach led to a favorable improvement in renal function with creatinine levels decreasing from 328 to 105 $\mu\text{mol/L}$, absence of hemolysis with stable hemoglobin around 10 g/dL without any transfusions.

Conclusion: The presence of thrombotic microangiopathy in this patient, in conjunction with anti-GBM disease, suggests a possible additive or synergistic effect of cannabis on renal pathology. Further research is needed to fully understand the relationship between cannabis use and renal damage, particularly in the context of other underlying conditions.