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Systemic lupus erythematosus and ANCA-associated glomerulonephritis: an overlap syndrome

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Case Study: Systemic lupus erythematosus (SLE) is an autoimmune disease that present various manifestations and involve many organs like kidney. Anti-neutrophil cytoplasmic antibody (ANCA) associated glomerulonephritis (GN) is associated with autoimmune response that produces ANCAs that has high mortality and morbidity among elderly patients. These diseases can overlap rarely. A 76-year-old man visited our hospital who presented with general weakness, mild azotemia, microscopic hematuria and abnormal chest X-ray with ground glass opacity pattern. First impressions were pneumonia and acute kidney injury. But chest X-ray didn't improved by antibiotics treatment for 5 days and started hemoptysis. So, bronchoscopy with bronchoalveolar lavage (BAL) was performed. There was no typical diffuse alveolar hemorrhage in BAL, but pulmonary hemorrhage suspected in chest computed tomography. Based on the history of photosensitivity, positive FANA, anti-ds DNA and anti-phospholipid antibody, and low complement levels. But his p-ANCA was positive, too. To confirm for his rapidly progressive azotemia, renal biopsy was done. We suspected both lupus nephritis and ANCA-associated GN. It showed that half glomeruli were global sclerosis and the other glomeruli showed necrotizing crescents in light microscope. In the electron microscope, the glomerulus showed diffuse effacement of epithelial foot processes and irregular basement membrane in thickness. All immunoglobulins were not observed in immunofluorescence staining. Based on these findings, we diagnosed kidney involvement to ANCA-associated GN. We started plasma exchange, methylprednisolone and cyclophosphamide for ANCA-associated GN with diffuse alveolar hemorrhage and hydroxychloroquine for SLE. Subsequently, microscopic hematuria, azotemia and alveolar hemorrhage were improved after 6 times of plasma exchange. We experienced overlap syndrome with ANCA-associated GN and SLE. If patient has rapidly azotemia aggravation with both ANCA and FANA positive, we should suspect overlap syndrome and perform the renal biopsy for considering aggressive treatment for organ saving.