

Congress Abstract

## Application of Belimumab in the Pathogenetic Therapy of Systemic Lupus Erythematosus with Class IV Lupus Nephritis and Acute Kidney Injury in Uzbekistan

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### ABSTRACT

**Background:** Class IV lupus nephritis is a severe manifestation of systemic lupus erythematosus (SLE) that may cause acute kidney injury (AKI) requiring renal replacement therapy (RRT). Recovery of kidney function is particularly challenging in severe SLE flares complicated by secondary antiphospholipid syndrome. This case is noteworthy for recurrent dialysis-requiring AKI followed by renal recovery during comprehensive pathogenetic therapy including belimumab.

**Case Presentation:** A 42-year-old female with SLE and class IV lupus nephritis underwent kidney biopsy on 24.12.2024, demonstrating diffuse proliferative glomerulonephritis, class IV lupus nephritis, with an activity index of 5/24 and chronicity index of 1/12. On 08.02.2025, SELENA-SLEDAI score was 23 points. Initial laboratory findings included creatinine 451  $\mu\text{mol/L}$ , urea 9.6 mmol/L, albumin 32 g/L, total protein 46 g/L, and platelets  $32 \times 10^9/\text{L}$ . Immunological testing showed anti-dsDNA 66.56, ANA 306.0, anticardiolipin IgG >100, anti- $\beta 2$ -glycoprotein I IgG >100, and positive lupus anticoagulant, consistent with secondary antiphospholipid syndrome. RRT was initiated on 06.02.2025. Intravenous methylprednisolone pulse therapy 1000 mg/day was administered on 08–09.02.2025, followed on 10.02.2025 by methylprednisolone 500 mg and cyclophosphamide 600 mg intravenously. The last hemodialysis session was performed on 14.02.2025. On 15.03.2025, repeated pulse therapy with methylprednisolone 1000 mg and cyclophosphamide 1000 mg was administered. Following COVID-19 infection complicated by bilateral polysegmental pneumonia, renal function deteriorated again on 09.04.2025: creatinine 551.9  $\mu\text{mol/L}$  and urea 27.11 mmol/L, requiring hemodialysis. On 15.04.2025, repeated intravenous pulse therapy with methylprednisolone 1000 mg and cyclophosphamide 1000 mg was administered. Subsequently, methylprednisolone 16 mg/day, mycophenolic acid 1440 mg/day, and belimumab 10 mg/kg intravenously on days 0, 14, and 28, followed by every 28 days, were prescribed. Diuresis recovered, creatinine decreased to 194  $\mu\text{mol/L}$  and urea to 10.1 mmol/L, while albumin increased to 36 g/L, total protein to 53 g/L, and platelets to  $139 \times 10^9/\text{L}$ , allowing discontinuation of RRT.

**Conclusion:** Comprehensive pathogenetic therapy including belimumab was associated with recovery of kidney function and RRT independence in severe class IV lupus nephritis with recurrent AKI. This case highlights the potential clinical value of belimumab within comprehensive therapy and demonstrates that renal recovery may occur even after dialysis-requiring AKI. This clinical course emphasizes timely immunosuppression, close renal monitoring, and individualized treatment strategies in severe lupus nephritis with recurrent kidney injury requiring prolonged dialysis support.

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|  | <b>Keywords:</b> Systemic Lupus Erythematosus; Lupus Nephritis; Belimumab; Acute Kidney Injury; Renal Replacement Therapy |
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