Ciclosporin/corticotropin/rituximab

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Acute kidney injury, transient liver damage and lack of efficacy: case report

A 5-year-old boy developed acute kidney injury during treatment with ciclosporin for primacy nephrotic syndrome and transient liver damage during treatment with corticotropin for focal segmental glomerulosclerosis. Further, he experienced a lack of efficacy during treatment with ciclosporin and rituximab for focal segmental glomerulosclerosis [*not all routes, dosages and times to reaction onsets stated*].

The boy was diagnosed with primary nephrotic syndrome in January 2016 following upper respiratory tract infection. He subsequently started receiving ciclosporin [ciclosporin A] 50mg every 12 hours for six days, tacrolimus and cyclophosphamide. However, he developed acute kidney injury secondary to ciclosporin.

Therefore, ciclosporin was discontinued. Tacrolimus was also discontinued due to pleurisy, peritonitis and cellulitis [*aetiology not specified*]. The boy's urinary protein remained positive, and his renal function gradually deteriorated. After 10 months of onset, his condition progressed to end-stage renal disease, requiring continuous haemodialysis. After being dialysis-dependent for 1 year, he underwent allogeneic kidney transplantation on 23 November 2017. Post-transplant, he received anti-rejection therapy with mycophenolate mofetil, prednisone and tacrolimus. The proteinuria persisted. On 5 January 2018, renal graft biopsy revealed mild graft glomerular lesion with focal acute tubular injury; this was considered podocytopathy. Hence, he was treated with methylprednisolone pulse therapy with plasma exchange. After fifteen sessions of plasma exchange, his 24-hour urinary protein remained unaltered. Hence, another renal graft biopsy was performed on 10 May 2018; the findings were consistent with focal segmental glomerulosclerosis. Hence, he started receiving rituximab 100 mg/dose for five doses, in combination with ciclosporin pulse therapy. However, his 24-hour urinary protein did not improve, indicating lack of efficacy. Therefore, in 2019, he started receiving an IV drip of corticotropin [adrenocorticotropic hormone] 1 U/kg daily for 14 days, one course per month. The dose of prednisone was reduced. Corticotropin was continued until February 2021, when he achieved complete remission. However, since September 2019, he required dose adjustments to IM corticotropin 12.5U BID several times, given the long distance of commute and the COVID-19 pandemic. Also, he experienced an increase in liver enzymes after using ACTH for 2 months, suggesting transient liver damage. He was treated with hepatoprotective drugs, resulting in gradual normalisation of ALT.

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