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Long-term Treatment Outcome of Tubulo-interstitial Nephritis and Uveitis Syndrome Associated Panuveitis with Steroid and Mycophenolate Mofetil

Dear Editor,

Tubulo-interstitial nephritis and uveitis syndrome (TINU) is a rare oculo-renal disease that classically presents with acute, bilateral, non-granulomatous anterior uveitis that precedes, coincides with, or follows onset of interstitial nephritis in the pediatric age group [1]. Treatment of TINU, particularly panuveitis, is challenging, and the long-term prognosis remains unclear. We present a case of pediatric TINU complicated by panuveitis, vasculitis, and retinitis and that showed an excellent response to prednisolone and mycophenolate mofetil (MMF) in a patient who displayed favorable long-term prognosis 8 years posttreatment.

A 7-year-old Chinese female investigated for nocturnal enuresis was found to have glucosuria, azotemia, and renal impairment. Initial investigation showed positive serum anti-nuclear factor (1:480) and anti-double stranded DNA, but the results were inconclusive for systemic lupus erythematosus. Estimated creatinine clearance using the calculation by Schwartz was 43 mL/min/1.73m^2. Urinalysis revealed increased beta-2 microglobulin (B2M) significant for tubular proteinuria (94.2 μg/mL). The investigation was otherwise negative for vasculitis, and the metabolic and toxicology panels were unremarkable. Five months after onset of nephritis, bilateral anterior uveitis was diagnosed, and the patient received topical steroids and demonstrated a good response. Subsequent renal biopsy revealed significant tubulitis and tubulo-interstitial nephritis with plasma cell and lymphocytic infiltration, sparing the glomeruli and arterioles.

The results confirmed TINU as the overall diagnosis. The patient received oral prednisolone 40 mg/day and MMF 500 mg twice daily and demonstrated progressive improvement of renal function and urine B2M (B2M 5 μg/mL, creatinine clearance 72 mL/min/1.73 m^2). The anterior uveitis was steroid-dependent and required 2 years of weaning. Following a 6-month period of remission, bilateral panuveitis in the form of inferior vitritis, peripheral vasculitis, and retinitis ensued. Prednisolone 30 mg/day and MMF 250 mg twice daily were promptly recommenced and showed immediate reduction of vascular sheathing and vitreous clumping. MMF was weaned at 18 months, and prednisolone was stopped at 3 years (Fig. 1A, 1B). Upon remission, the patient's best corrected visual acuity was preserved at 20 / 25 bilaterally and remained stable for 8 years. No growth retardation or toxicity related to use of steroids and MMF were documented.

Panuveitis in pediatric TINU is rare, and treatments are not standardized. The largest series of panuveitis in TINU consisted of six pediatric cases in which systemic steroids with MMF, methotrexate, or infliximab, either as a sole agent or in combination, showed favorable results [2]. Another case of panuveitis and choroiditis employed an oral corticosteroid and adalimumab after an insufficient response to MMF [3]. A patient from Korea achieved clinical remission with use of systemic steroids and azathioprine [4]. However, data on long-term prognosis after treatment of panuveitis in TINU are lacking. We have demonstrated that the combination of prednisolone and MMF was safe and efficacious in treatment of panuveitis in TINU, and the patient maintained clinical remission for up to 8 years with good long-term visual and renal outcomes. Treatment for TINU requires an average of 13 to 29.5 months of immunosuppression [5]. The duration of immunosuppression from diagnosis to remission was 3 years in the present case due to posterior involvement. Prompt initiation and adequate duration of immunosuppression are required for optimal control of panuveitis and to prevent renal complications and growth failure.

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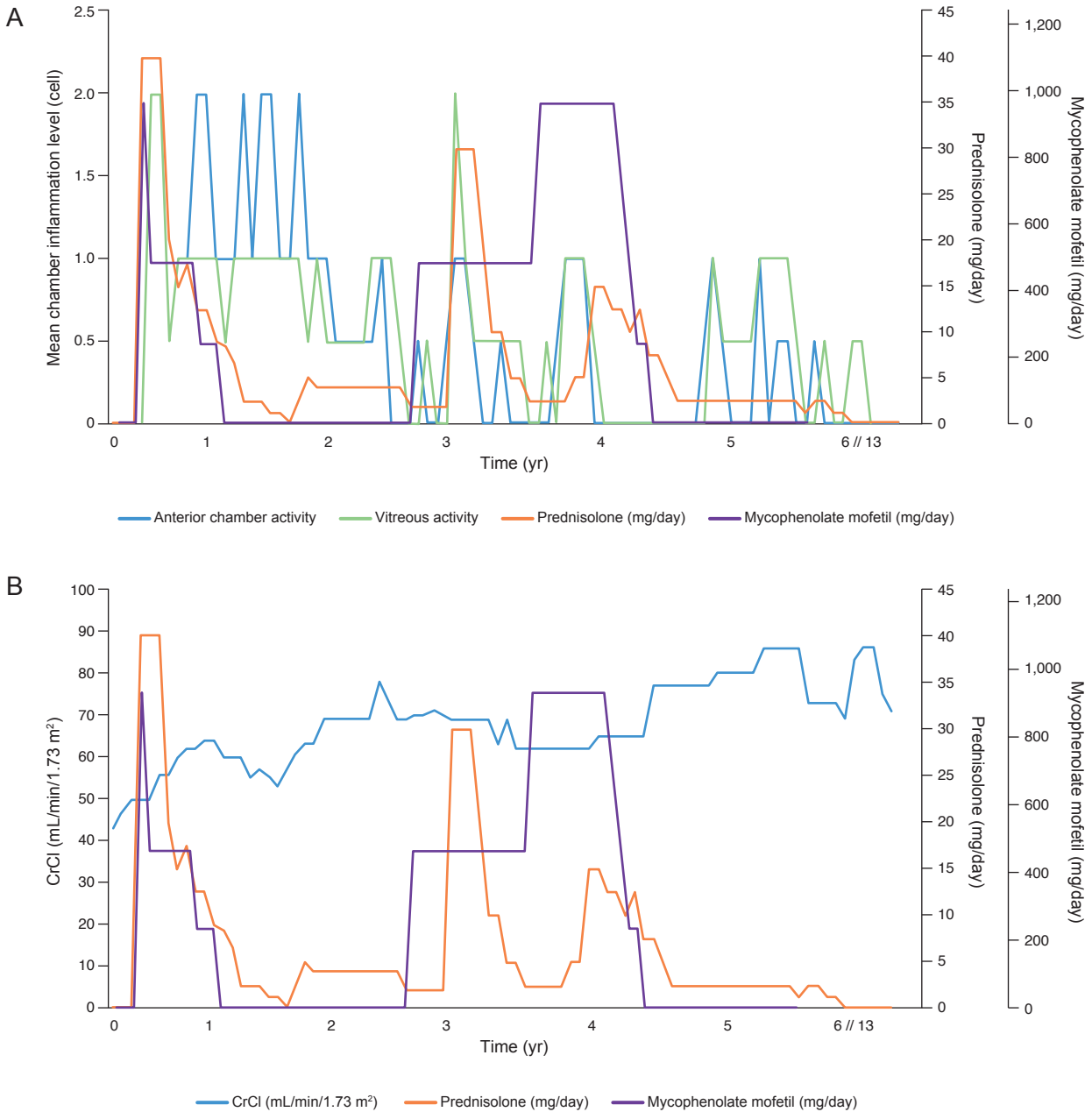

Fig. 1. (A) Improvement of anterior and posterior chamber inflammation in a patient with tubulo-interstitial nephritis and uveitis syndrome syndrome who was treated with prednisolone and mycophenolate mofetil. (B) Improvement of renal function in tubulo-interstitial nephritis and uveitis syndrome syndrome in the same patient. CrCl, creatinine clearance.

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Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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