

Case Report

The combined use of sirolimus and cyclosporin in the management of refractory minimal change nephropathy: ‘a novel use of sirolimus’

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Abstract

Minimal change nephropathy (MCN) accounts for around 25% of adults presenting with a nephrotic syndrome. Although most patients respond to corticosteroid therapy, a significant number relapse frequently and may present a real therapeutic difficulty. We present a case of apparently refractory relapsing MCN that was successfully treated with a combination of sirolimus and cyclosporin, resulting in the longest period of steroid free remission that the patient has ever experienced. To our knowledge, this is the first documented use of this combination in this manner.

Keywords: cyclosporine; minimal change; nephrotic syndrome; sirolimus

successfully, but neither the relapse rate nor the steroid requirements improved.

In 2003, cyclosporin was re-introduced to minimize steroid exposure with trough plasma levels of 149 µg/L. In the preceding 14 years, the prednisolone dose had rarely been below 15 mg/day, and there had typically been two to three relapses per year. In 2006, sirolimus 2 mg/day was added to her prednisolone (15 mg/day), and cyclosporin (6 mg/kg/day)—she was also prescribed primidone since childhood for epilepsy. At review, the trough plasma levels of cyclosporin and sirolimus were 153 µg/L and 2.9 µg/L, respectively. Steroids were gradually reduced and subsequently completely discontinued 24 months after sirolimus was added with no relapses in the last 30 months.

Introduction

Minimal change nephropathy (MCN) accounts for ~25% of adults presenting with a nephrotic syndrome [1]. Although most patients respond to corticosteroid therapy, a significant number relapse frequently and may present a real therapeutic difficulty. We present a case of apparently refractory relapsing MCN that was successfully treated with a combination of sirolimus and cyclosporin.

Clinical case report

In 1989, a 35-year-old female presented acutely with heavy proteinuria (22 g/24 h) and normal renal function. Renal histology was compatible with minimal change nephropathy (MCN). She was commenced on oral prednisolone (60 mg od), and achieved complete remission within weeks. However, multiple relapses followed on reduction of the corticosteroid dose. Azathioprine, cyclosporin, mycophenolate mofetil, tacrolimus and chlorambucil were all tried unsuc-

Discussion

MCN is predominantly a steroid-responsive disease, with around 75% of adult patients achieving remission by 8 weeks. Unfortunately, 30–60% will suffer at least one episode of relapse and around 25% will do so more frequently [1,2]. A variety of immunosuppressive medications, each with its own side effect profiles, have been trialled as steroid-sparing agents with variable success [3]. Frequently relapsing minimal change disease inevitably results in the use of novel therapies, or combinations of therapies. The first documented use of sirolimus in combination with tacrolimus as a therapeutic option in MCN was published in 2005 by Patel *et al.* [4].

In conclusion, we have detailed a case of relapsing MCN, which has only been controlled by the combined use of sirolimus and cyclosporin. This has not only resulted in the longest period of remission, but has also allowed for the discontinuation of corticosteroids. This is the second documented use of sirolimus in this manner that we are aware of and the first that has trialled the combination of sirolimus and cyclosporin.

Conflict of interest statement. None declared.

References

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