P437

# P437 -Successful treatment of active lupus in a patient on haemodialysis using belimumab

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Introduction

Flares of systemic lupus erythematosus (SLE) while on dialysis are relatively unusual and challenging to treat. Belimumab is a human recombinant monoclonal antibody directed against B Lymphocyte stimulator(BLyS) which has recently received NICE approval for the treatment of extra-renal lupus flares. Herein we report the first ever case of belimumab treatment of a flare of lupus in a patient on haemodialysis.

Case Report

A 41-year-old obese, type 2 diabetic, female with dialysis-dependent end-stage renal disease (ESRD) secondary to lupus nephritis(LN) developed a systemic lupus flare.

SLE had been diagnosed 16 years previously. Four years after disease onset, she developed class IV LN, treated with rituximab and methylprednisolone, followed by maintenance prednisolone and mycophenolate mofetil(MMF). At 12 years, she suffered a further flare of LN-despite treatment with cyclophosphamide, rituximab, methylprednisolone and MMF she developed a rapidly progressive glomerulonephritis. The addition of plasma exchange did not recover renal function and she became dialysis dependent. She was maintained on prednisolone 5mg daily and hydroxychloroquine 200mg daily.

After one year on dialysis she developed a clinical and biochemical (dsDNA=1249 IU/ml (normal=1-10), c3=0.7g/L (normal=0.90-1.8)) flare of lupus with mucocutaneous involvement, hair loss, polyarthralgia and pericarditis/ serositis requiring multiple hospital admissions. Prednisolone was increased to 20mg daily and MMF 500mg daily was restarted without improvement.

Given her previous immunosuppressant exposure and relative contraindications to high dose steroids belimumab was initiated. This resulted in symptomatic and biochemical resolution of her lupus and allowed a reduction in prednisolone dosage to 5mg daily. After 6 months of belimumab treatment, the patient requested to re-trial MMF 500mg daily. This resulted in a further clinical and biochemical flare and belimumab was again restarted with symptomatic and biochemical remission.

Discussion

Conventional teaching dictates that once SLE causes ESRD requiring dialysis initiation, the disease often becomes quiescent. This phenomenon has been demonstrated in both haemodialysis and peritoneal dialysis patients, using both symptomatic and serologic markers as well as validated disease activity scores (e.g. SLEDAI)

Possible explanations for this include uraemia-induced immunodeficiency and removal of plasma factors that induce lupus reactivation. However, a minority of patients experience no change or even an increase in disease activity. There are also case reports of SLE initially presenting years after dialysis initiation.

The evidence base for the treatment of SLE in patients on dialysis is scant. Many nephrologists aim to reduce or stop maintenance immunosuppression, if possible. Disease flares are often treated with prednisolone. When symptoms persist or long-term treatment is required, mycophenolate, calcineurin inhibitors and rituximab can be used. Methotrexate and possibly intravenous cyclophosphamide should be avoided.

Belimumab is a relatively new addition to the therapeutic armamentarium for extra-renal SLE flares, where it has randominsed controlled trial evidence of reduction in disease activity. Its use as an add-on therapy for active extra-renal SLE in haemodialysis patients has not previously been reported. Though this represents only a single case study, our experience suggests that belimumab is a safe and effective treatment for active lupus in patients on dialysis, potentially avoiding the need for additional steroid therapy.