**Introduction:**

Recurrence of Focal Segmental Glomerulosclerosis (FSGS) post renal transplant occurs in up to 50% of patients without an underlying genetic cause (Cravedi 2012) and is difficult to treat. The use of plasma exchange followed by Rituximab, an anti-CD20 monoclonal antibody has been shown to be effective at inducing partial or full remission (Tsagalis 2011). However Rituximab has a high incidence of standard infusion reactions, with between 1-20% of patients having an immediate (anaphylaxis) or delayed hypersensitivity reaction (serum sickness) that precludes its future use (Guan 2015).

We present a case of a 14 year old girl with a previous serum sickness reaction to Rituximab, who was successfully treated for immediate recurrence of FSGS in the transplant kidney with plasma exchange followed by Ofatumumab (a fully humanized anti-CD20 monoclonal antibody) without any adverse reactions.

**Case Description:**

Our patient presented at three years of age with frequently relapsing steroid sensitive nephrotic syndrome. The patient was treated with cyclophosphamide and ciclopsorin before developing steroid resistance and commencing a course of Rituximab. There was initial good response with remission for 9 months before relapse whilst on maintenance low dose prednisolone and tacrolimus. A second course of Rituximab was administered as the CD19/20 count had recovered. A week after the first dose of the second course of Rituximab our patient became severely unwell with a serum sickness reaction with myalgia, arthralgia, oral ulceration, a fleeting erythematous rash and raised ESR, and CRP. Clinically our patient remained nephrotic with significant symptomatic oedema. She was managed with intermittent 20% Human Albumin Solution (HAS) infusions and latterly ultrafiltration via a haemodialysis line. Unfortunately she developed end stage renal failure and became anuric and was commenced on hemodialysis. Bilateral nephrectomies were performed to allow progression towards transplantation. The renal tissue was sent for histology which confirmed underlying FSGS. Our patient went on to have a renal transplant from an altruistic donor five months post nephrectomy. In light of the previous reaction to Rituximab, induction immunosuppression was with methyl prednisolone. Maintenance immunosuppression was with prednisolone, tacrolimus and mycofenolate. There was initial good primary function of the renal allograft , but clinical evidence of recurrence of FSGS with significant proteinuria, fall in serum albumin and oedema within the first 24 hours post-transplant despite good tacrolimus levels. Plasma exchange was commenced on day 3 post transplant, with five sessions a week for 2 weeks, followed by a weaning regime over a 3 week period. A renal biopsy on day 5 post transplant confirmed that there was no evidence of rejection. There was also no evidence of FSGS but this was felt to be the diagnosis based on the clinical picture. Haemodialysis was required on D 7 and 10 post transplant because of oligoanuria and urea and electrolyte abnormalities. In light of the previous severe reaction to Rituximab we elected to treat our patient with Ofatumumab. Ofatumumab infusions were given on day 25 with a second infusion a week later. No adverse reactions were observed during the infusion or in the period that followed. Six months later the patient has stable renal function with a creatinine of 50-60umol/L and there is no evidence of proteinuria.

**Discussion:**

There is limited evidence for the best course of treatment in patients that develop recurrence of FSGS post transplant. The clinical course of our patient demonstrates that Ofatumumab in conjunction with plasma exchange can induce and maintain remission in patients with early recurrence of FSGS post renal transplant and is a suitable alternative for patients where Rituximab is contraindicated.