**A successful pregnancy in a patient following renal transplantation for atypical HUS managed with eculizumab**

**Introduction:** Atypical haemolytic uraemic syndrome (aHUS) is a rare disorder that is often associated with genetic disorders in the complement system and/or antibodies towards complement factors. Recurrence following transplantation or in pregnancy, especially in the third trimester or the post-partum period, are well recognised. We describe a case of a successful pregnancy in a patient, who had previously received a renal transplant for aHUS, and was managed with eculizumab prior to and during her pregnancy.

**Case:** A 24 year old woman originally presented with ESRD of uncertain aetiology and underwent a pre-emptive renal transplant from a living related donor. Two years later, her transplant function deteriorated. A biopsy revealed thrombotic microangiopathy, and a diagnosis of aHUS was made. She was commenced on eculizumab 1200mg every two weeks, and her transplant function stabilised. Around 17 months following this, she expressed a wish to become pregnant, and was referred to the Combined Renal Obstetric clinic.

Following pre-conception counselling, a care plan was jointly agreed by the nephrology, obstetrics, immunology, and pharmacy teams, with input from the National Renal Complement Therapeutics Centre at Newcastle. At this time, her eGFR was around 45 ml/min and there was no significant proteinuria (urine protein:creatinine ratio (UPCR) 14 mg/mmol)

She later presented to the Renal Obstetrics clinic 8 weeks pregnant. She was commenced on aspirin, and her eculizumab dose was increased to 900mg weekly, with plans for additional doses if there was suspected haemolysis or sudden decline in kidney function.

She developed pregnancy induced hypertension at 21+5/40, and was commenced on nifedipine. At 24/40, proteinuria was detected (UPCR 60 mg/mmol), blood pressure was elevated and labetolol was added. Methyldopa was then introduced due to persistent hypertension. At 27/40, due to concerns about pre-eclampsia, she was commenced on steroids to promote fetal lung maturation.

At 29+5/40, she developed oedema, worsening hypertension, increased proteinuria (UPCR 822), decline in renal function and platelets, and increased LDH. It was difficult to discern whether this was an episode of TMA/haemolysis or pre-eclampsia. After a fetal USS demonstrated impaired fetal growth and absent end-diastolic flow in the uterine artery, a diagnosis of pre-eclampsia was made. Intravenous magnesium and labetolol were administered, and an emergency Caesarian section was performed. A healthy female infant weighing 950g was delivered. CH50 and AH50 levels were suppressed throughout the pregnancy and post-partum periods indicating adequate suppression of complement activity by eculizumab.

She was given two 900mg eculizumab infusions in the first post-natal week, and blood pressure was controlled on two agents. Hb and platelets remained stable, and creatinine returned to pre-pregnancy levels. UPCR remained in the nephrotic range (887). At one week post-partum, her eculizumab dose was reduced to once weekly. At latest follow up her eGFR is 41 ml/min.

**Discussion:** There have now beenseveral case reports concerning the safe treatment of pregnancy associated HUS with eculizumab. To our knowledge, this is the first description of a successful pregnancy in a patient who had previously received a renal transplant for aHUS, who was managed with a tailored regime of eculizumab. Our case highlights the importance of close monitoring during pregnancy and the post-partum period.