Background and Aims A recent RCT suggested improved neurological outcome at discharge for moderate to severe perinatal asphyxia babies given iv magnesium sulphate. However, this trial was performed in babies who were not cooled.

Methods We present a pilot case series of 3 patients with moderate to severe HIE who satisfied the criteria for cooling and received both cooling and iv magnesium sulphate loading of 200mg/kg. Serum Magnesium levels were monitored at 0, 12, 24, 48, 72 hours of cooling.

The babies were reviewed for adverse effects of magnesium sulphate in terms of hypotension, arrhythmia, feed intolerance, respiratory depression and hypocalcemia.

Results One patient received systemic cooling and two other patients received selective head cooling. In addition to iv magnesium sulphate loading, decision was made to institute continuous infusion of iv magnesium sulphate in one of these patients for 4 days at 20–40 mg/kg/h for PPHN. All babies achieved serum magnesium levels of >1.2 mmol/l within 24h of the loading dose, which was similar to the level aimed for in the previous RCT.

Magnesium sulphate was well tolerated with only mild hypotension requiring one day of dopamine (max 5 mcg/kg/min) in one patient. No babies had respiratory depression, arrhythmia, feed intolerance or hypocalcemia. Neurodevelopmental outcome to date is also presented.

Conclusions Magnesium sulphate is well tolerated in babies with moderate to severe HIE in the cooling era. A large RCT is required to assess its efficacy, long term impact and further look into adverse effects.

Background Background Hypoxic Ischaemic Encephalopathy (HIE) affects 1–2 per 1,000 live births in UK. The TOBY study showed that therapeutic hypothermia (TH) is beneficial for babies with moderate HIE. In view of this we established an in-house cooling service.

Aim To review our experiences in establishing an in-house cooling service.

Methods The Badger electronic database was used to identify babies who received TH in the last 2 years (01/01/10 to 31/12/11). The management and outcomes were analysed.

Results In the last two years, 27 babies commenced in-house TH. 5 babies were transferred out to another unit for TH for bed capacity reasons. A further 3 babies died before discharge home. 19 babies received the full 72 hours of cooling in our centre. We did not encounter any major complications with the servo-controlled cooling mattress. Only 50% of babies had their MRI in the defined time period as per the TOBY guidelines. All babies are being followed up by a dedicated consultant Neonatologist and neurodevelopmental physiotherapist to assess their neurodevelopment up to the age of 2 years.

Conclusion We have safely established an in-house cooling service by following the TOBY guidelines. The servo-controlled cooling mattress provides a safe cooling process with a rectal probe. Identifying these babies early and the interpretation of CFAM was an important aspect of training. Our main challenge was to get an MRI post cooling in a timely fashion. This has been resolved with an agreed dedicated slot for these babies at Birmingham Children’s Hospital.

Background and Aims Hypoxia and subsequent reoxygenation cause a burst of oxygen free radicals. A gas mixture of ambient air and hydrogen may provide early neuroprotection.

Hydrogen may act as a therapeutic antioxidant by selectively reducing cytotoxic oxygen radicals and thereby contribute to less apoptosis.