

CARDIAC MRI FOR THE ASSESSMENT OF CARDIAC FUNCTION IN THE NEWBORN**A. Groves***Centre for the Developing Brain, Imperial College London, London, UK*

While many aspects of neonatal care have progressed rapidly in recent decades, circulatory management remains at a virtual standstill. The wide variation in intervention to treat low blood pressure and ductal patency between different neonatal units highlights how little evidence is available to guide management decisions.

The paucity of biomarkers to assess key elements of circulatory function perpetuates this clinical uncertainty. While echocardiography has undoubtedly produced some advances in understanding, the method is limited by poor repeatability and user-dependency of measurements.

Cardiac MRI techniques have produced significant advances in understanding of adult circulatory physiology and are the gold standard for adult cardiac function assessments. Our group has now implemented cardiac MRI techniques in newborn term and preterm infants. Scans can be performed safely, without the need for sedation/anaesthesia, and with maintenance of cardiorespiratory and thermal stability.

We acknowledge that cardiac MRI will not be used as a cotside tool for circulatory assessment in the foreseeable future. However in this talk we present our initial experience with the technique, and how we believe the technique could (i) - increase understanding of circulatory pathophysiology in the newborn, (ii) - guide development of emerging echocardiographic techniques and (iii) - act as a powerful biomarker in clinical trials of therapeutic intervention.