

Symposium

Symposium 3 (I-S03)

How to assess the ventricular function in pediatric cardiology -

Noninvasive and invasive method -

Chair:Satoshi Masutani(Pediatric Cardiology, Saitama Medical University Saitama Medical Center, Japan)

Chair:Yoshiki Mori(The Department of Pediatric Cardiology, Seirei Hamamatsu General Hospital, Japan)

Fri. Jul 7, 2017 4:00 PM - 5:45 PM ROOM 2 (Exhibition and Event Hall Room 2)

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[I-S03-06 【Keynote Lecture】]Fetal Cardiac MRI

○Kuberan Pushparajah (Evelina London Children's Hospital and King's College London, UK)

Conventional fetal echocardiography is the mainstay for prenatal diagnosis of congenital cardiac lesions, based on its ease of use, availability and high diagnostic accuracy. However, individual fetal and maternal factors can affect the quality of ultrasound imaging, and there remain inherent difficulties in diagnosing specific forms of congenital heart disease in the fetus. Magnetic resonance imaging (MRI) has been an established adjunct for postnatal assessment of the cardiovascular system since the 1980s, with routine studies able to deliver three-dimensional angiography, detailed real-time imaging, cardiac volumes and vascular flow measurements. MRI, whilst safe in pregnancy, has traditionally been limited by uncontrollable fetal motion and the lack of a detectable ECG with limitations of spatial resolution.

Technological advancements in cardiac MRI now allow for assessment of anatomy, quantification of flow and oxygen content in the fetal circulation. These modalities are now adding important insights into fetal cardiac and vascular malformations, with co-existing alterations of the fetal circulation and its effect on neurodevelopment. Fetal cardiac MRI now has the potential to serve as a clinical adjunct to the diagnosis and management of fetal cardiovascular malformations.