

シンポジウム

シンポジウム5

小児心不全の治療

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2015年7月16日(木) 10:40 ~ 12:10 第3会場 (1F ペガサス C)

I-S05-01~I-S05-05

所属正式名称: 石川司朗(福岡市立こども病院 小児科(循環器)), 村上智明(千葉県こども病院 循環器内科)

[I-S05-01]State of Art: Beta-receptor in Pediatric Heart Failure

○Shelley Deanne Miyamoto (University of Colorado Denver Children's Hospital Colorado, USA)

Although the pathophysiology and treatment of adult heart failure (HF) are well studied, HF in children remains poorly understood. In adults, adrenergic receptor (AR)-mediated adaptation plays a central role in cardiac abnormalities in HF, and these patients respond well to β -blocker (BB) therapy. However, in children with HF, there is a growing body of literature suggesting a lack of efficacy of adult HF therapies. Due to these unanticipated differences in response to therapy and the paucity of data regarding the molecular adaptation of the paediatric heart, we investigated the molecular characteristics of HF in children. Explanted hearts from adults and children with idiopathic dilated cardiomyopathy and non-failing controls were used in the study. Our results show that the molecular characteristics of pediatric HF are strikingly different from their adult counterparts. There are differences in β 1- and β 2-AR expression, up-regulation of connexin43, phosphatase expression and in the phosphorylation of phospholamban. More recently we have discovered gender-based differences in β -AR expression patterns in pediatric HF. There is a different adaptation of β -AR and adrenergic signaling pathways in children with HF compared with adults. Our results begin to address the disparities in cardiovascular research specific to children and suggest that age-related differences in adaptation could influence the response to therapy. These findings could lead to a paradigm shift in the contemporary approach to and management of children with HF.