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Decreased yes-associated protein 1 (YAP1) expression in pediatric hearts with ventricular septal defects

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Ventricular septal defects (VSDs) are the most common and simplest type of congenital heart diseases (CHDs). Animal studies have suggested that the downregulation of yes-associated protein 1 (YAP1) during embryonic development causes VSD associated CHDs. However, how YAP1 contributes to isolated VSD (iVSD) is unclear. 20 right atrial specimens were obtained from iVSD patients during routine congenital cardiac surgery and we assessed YAP1 expression in these specimens. For controls, six right atrial specimens were obtained from normal hearts of children without heart disease, three of whom died from cerebral palsy, and three who underwent heart transplants. YAP1 mRNA and protein levels and nuclear localization were significantly reduced in iVSD specimens compared to normal heart specimens. Concomitantly, mRNA levels of YAP1 downstream targets CTGF and AXL were also significantly decreased in iVSD specimens. Although Ki67-positive cardiomyocytes in iVSD specimens were comparable to normal heart specimens, Ki67-positive non-cardiomyocytes were significantly decreased. YAP1 expression was markedly decreased in hearts of iVSD children. Given the important role of YAP1 during heart development, downregulation of YAP1 expression may contribute to iVSD and affect the proliferation of non-cardiomyocytes.

Biography

Jinfen Liu has completed his MD from Shanghai Jiaotong University School of Medicine. He is the Director of Shanghai Pediatric Congenital Heart Disease Institute, member of World Pediatric Heart Surgery Management Committee, member of American Association for Thoracic Surgery, and Chairman of the Standing Committee of Chinese Pediatric Surgery. He has published more than 104 papers in reputed journals and has been serving as Associate Editor of *World Journal for Pediatric & Congenital Heart Surgery*.

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