



International Conference on Emergency Medicine and Critical Care

July 25-26, 2019 Rome, Italy

Role of Microrna-30 in the Regulation of Cardiac Remodeling Induced by Pressure Overload

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Cardiac remodeling is the common Patho physiological process of a variety of heart diseases toward heart failure. The existing treatments are still poor efficacy in a number of patients with the poor prognosis. It was well known that micro RNAs are endogenous non-coding RNA molecules that regulate gene expression, which result in either gene degradation or translational repression. The miRNAs are critically involved in many biological processes in disease. Previous studies have shown that miR-30 could decrease autophagic activity in cancer cells by negatively regulating Beclin-1 gene expression. However, the research on miR-30 is blank in the field of cardiac remodeling. This study aimed to investigate the functional significance of miR-30 in cardiac remodeling induced by pressure overload using conditional miR-30 knockout mice. We found that miR-30 deficiency resulted in severe hypertrophy, fibrosis and dysfunction in mice compared with the control group which used the wild-type mice. We discovered that the expression of Beclin-1 was significantly increased in miR-30 deficiency hearts when compared with control hearts. Our study suggests that miR-30 might be a novel target for the treatment of pathological cardiac hypertrophy and failure.

Biography:

Zhouyan Bian got MD and Ph.D of Cardiology from Renmin Hospital of Wuhan University. She worked in Cardiovascular Research Institute of Wuhan University, and was mainly responsible for the research on cardiac remodeling. Her research showed that natural immunity plays an important role in the pathological process of cardiac remodeling. Several signaling molecules in natural immunity signaling pathway were displayed to be determinants in the outcomes of cardiac remodeling. These investigations implicate natural immunity as a novel therapeutic target for cardiac remodeling. Now she worked as an associate chief physician in Department of Cardiac Care Unit, Renmin Hospital of Wuhan University.