

BMP-7 ATTENUATES DIABETIC CARDIOMYOPATHY

Dinender K Singla

Division of Metabolic and Cardiovascular Sciences, Burnett School of Biomedical Sciences, College of Medicine, University of Central Florida, Orlando, FL, 32816, USA

Diabetic cardiomyopathy is a complex disease that involves progression of hyperglycemia, oxidative stress, and inflammation. However, the role of inflammation-induced pathological mechanisms are still evolving. Therefore, we will discuss inflammation-induced cell death pyroptosis, inflammasome formation, and downstream pathways leading to tissue inflammation. Additional mechanisms of cell death pathways will be presented with specific emphasis on the involvement of Nek7-GBP5 pathway in cell death. Next, we will discuss inflammatory cellular infiltration, and the role of tissue inflammation mediated structural cardiac remodeling and cardiac dysfunction in streptozotocin-induced diabetes. Data in this study was confirmed using Immunostaining, Western blotting, H&E, and Masson's trichrome staining on diabetic hearts. Furthermore, BMP-7 treatment attenuated a series of inflammatory, pathophysiological, and structural adverse effects together with improving cardiac function.