

Insulin resistance: Reading

Prof.Dr.Nuray ARI,2018

- [Diabetologia](#).2018 Jan;61(1):21-28. doi: 10.1007/s00125-017-4390-4.
 - **Diabetic cardiomyopathy: a hyperglycaemia- and insulin-resistance-induced heart disease.**
- Jia G Whaley-Connell A Sowers JR

- **Abstract**

- **Diabetic cardiomyopathy is characterised in its early stages by diastolic relaxation abnormalities and later by clinical heart failure in the absence of dyslipidaemia, hypertension and coronary artery disease. Insulin resistance, hyperinsulinaemia and hyperglycaemia are each independent risk factors for the development of diabetic cardiomyopathy. The pathophysiological factors in diabetes that drive the development of cardiomyopathy include systemic metabolic disorders, inappropriate activation of the renin-angiotensin-aldosterone system, subcellular component abnormalities, oxidative stress, inflammation and dysfunctional immune modulation. These abnormalities collectively promote cardiac tissue interstitial fibrosis, cardiac stiffness/diastolic dysfunction and, later, systolic dysfunction, precipitating the syndrome of clinical heart failure. Recent evidence has revealed that dysregulation of coronary endothelial cells and exosomes also contributes to the pathology behind diabetic cardiomyopathy. Herein, we review the relationships among insulin resistance/hyperinsulinaemia, hyperglycaemia and the development of cardiac dysfunction. We summarise the current understanding of the pathophysiological mechanisms in diabetic cardiomyopathy and explore potential preventative and therapeutic strategies.**