

Tissue Doppler Imaging Versus Conventional Echocardiography in Evaluation of Diastolic Function in Diabetic Patients

Febe E. Shaker, Khaled Elkhashab, Hany Younan, Mohamed A. Mashahit

Abstract:

Modifications and medical interventions could prevent or delay the subsequent development of heart failure in Diabetic patients. Conventional echocardiography was used to screen for and diagnose left ventricular diastolic dysfunction-LVDD- but the results was not satisfactory and underestimate the magnitude of LVDD due to the pseudo normal pattern in grade 2 diastolic dysfunction. Tissue Doppler imaging is considered a better non invasive and more accurate screening modality. The work aimed a comparing tissue Doppler imaging to conventional Echocardiography in diagnosing diastolic dysfunction in diabetic patients. Patients and methods forty diabetic patients and 20 age matched volunteers - as a control group - were included in this study individuals with IHD,HTN cardiomyopathy or any obvious liver or renal disease were excluded - blood sugar, lipid profile, ECG, conventional echocardiography and tissue Doppler imaging were done for all individuals. Results 22 of the 40 diabetic patients had diastolic dysfunction compared to only one of the control group and from those 22 with diastolic dysfunction 13 was diagnosed by both conventional echo and TDI, 1 patient diagnosed only by conventional echo, while 8 patients were diagnosed by TDI and the superiority of TDI in diagnosing LVDD compared to conventional Echocardiography was statistically significant. Also there was a liner correlation between duration of diabetes and the presence of LVDD that was statistically significant. Conclusion diabetics especially with longer disease duration are more prone to have diastolic dysfunction even with normal EF and FS and TDI is a better non invasive method in assessing diastolic dysfunction compared to the conventional Echocardiography.

Keywords: Echocardiography - Tissue Doppler imaging Diastolic dysfunction Diabetes; chemical components.

Life Science Journal 2012; 9(4); 2256-2262