Aim: The aim of this study was to investigate the impact of gender on the prediction of limited exercise capacity in heart failure (HF) patients assessed by 6 minute walk test (6-MWT).

Methods: In 147 HF patients (mean age 61 ±11 years, 50.3% male), a 6-MWT and a Doppler echocardiographic study were performed on the same day. Conventional cardiac measurements were obtained as well as global LV dyssynchrony was indirectly assessed using total isovolumic time — t-IVT [in s/min; calculated as: 60 - (total ejection time — total filling time)] and Tei index (t-IVT/ejection time). Patients were divided into two groups according to gender, which were again divided into two subgroups based on the 6-MWT distance (Group I: 300m, and Group II: >300m).

Results: Female patients were younger (p=0.02), and had higher left ventricular (LV) ejection fraction - EF (p=0.007) but with similar 6 MWT distance to male patients (p=68). Group I male patients had lower hemoglobin level (p=0.02) and lower EF (p=0.03), compared with Group II, but none of the clinical or echocardiographic variables differed between groups in female patients. In multivariate analysis, only t-IVT [0.699 (0.552-0.886), p=0.003], and LV EF [0.908 (0.835-0.987), p=0.02] in males, and NYHA functional class [4.439 (2.213-16.24), p=0.02] in females independently predicted poor 6-MWT distance (<300m).

Conclusion: Despite similar limited exercise capacity, gender determines the pattern of underlying cardiac disturbances; ventricular dysfunction in males and subjective NYHA class in female heart failure patients.

KEYWORDS: six-minute walk test, Doppler echocardiography, left ventricular function and dyssynchrony, gender.