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Effect of successful revascularization on left ventricular diastolic dysfunction in aorto-iliac occlusive disease

Background: Aortoiliac occlusive disease (AIOD) affects the systemic vascular resistance and increases the afterload because the left ventricle (LV) must work harder to eject blood into a smaller vascular bed. This study was to determine whether successful revascularization of AIOD is associated with improvement of left ventricular diastolic dysfunction (LVDD).Methods: A total of 37 patients with AIOD (34 men and 3 women; age 65.1 ± 7.2 years) were analyzed. The primary endpoint was defined as the change in the mitral E/E' ratio. Results: There were no significant changes in the E velocity (from 0.7 ± 0.2 m/s to 0.7 ± 0.2 m/s, p-value=0.153), A velocity (from 0.8 ± 0.2 m/s to 0.9 ± 0.2 m/s, p-value=0.169), LAVI (from 36.1 ± 18.7 mL/m2 to 33.9 ± 15.7 mL/m2, p-value=0.176), E/A ratio (from 0.9 ± 0.4 to 0.8 ± 0.2, p-value=0.091), and E' velocity (from 6.5 ± 2.0 m/s to 6.9 ± 2.1 m/s, p-value=0.068). However, successful revascularization significantly reduced the E/E' ratio (from 14.1 ± 5.7 to 11.7 ± 3.3, p-value=0.015). Additionally, a significant increase in the A' velocity (from 9.1± 1.9 m/s to 10.0 ± 2.2 m/s, p-value=0.029) and a decrease in the LA diameter (from 40.7 ± 6.4 mm to 38.6 ± 6.6 mm, p-value=0.014) were noted. Conclusion: Our results show that a successful revascularization of AIOD was associated with an improved E/E' ratio.