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Long Term Follow Up of Patients with Isolated Chronic Total Occlusion: Dynamics of Left Ventricle Structure and Function

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Background:
There is no agreement regarding the revascularization of patients with chronic total occlusions (CTO) and signs of ischaemia. Improvement of left ventricle (LV) structure and function is one of the treatment goals.

Methods:
32 patients with CTO of left descending artery (LAD) were included. All patients had positive exercise stress echocardiography test with the ischaemia in LAD zone. 12 patients underwent LIMA to LAD grafting, 9 patients had percutaneous coronary intervention (PCI) and 11 patients did not receive revascularization. Mean follow-up period was 6 years. End-diastolic diameter, end-diastolic volume, end-systolic volume and ejection fraction of left ventricle were assessed. Exercise stress-echocardiography was performed and wall motion score index was estimated before and after the stress.

Results:
End-diastolic diameter, end-diastolic volume reduction and end-systolic volume reduction were observed among patients without revascularization (p0.05). No significant changes of LV structure parameters were found in revascularization groups. Ejection fraction and wall motion score index (WMSI) did not change significantly in any group. ΔWMSI parameter significantly decreased in all three groups (p0,05), especially in the PCI group (p0,01).

Conclusion:
LV structure and function parameters improves and severity of ischemia decreases despite closed coronary artery among patients with LAD CTO.