AIM: To assess the prevalence of diastolic dysfunction of the left ventricle in patients with non-insulin-dependent diabetes mellitus (NIDDM) and its relation to patients' age and duration of diabetes.

METHODS: This case-control study included 228 subjects. The group of cases consisted of 114 patients with NIDDM. The group of controls included 114 subjects without diabetes, enrolled in the study at the same time as the group of cases. Diastolic function of the left ventricle was assessed by pulsed Doppler echocardiography. The ratio between the maximal early filling velocity (E wave) and the maximal late (atrial) filling velocity (A wave) less than 1 (E/A ratio<1) was considered as a criterion for left ventricle diastolic dysfunction.

RESULTS: The E/A ratio<1 was found in 75 patients (65.8%) in the group with diabetes, and in 38 subjects (33.3%) in the control group (P=0.001). Multiple logistic regression model showed that diabetes was the strongest independent correlate of left ventricle diastolic dysfunction (odds ratio 8.92, 95% confidence interval [CI] 4.20 to 18.52, P<0.001). In the group with diabetes, the multivariate analysis showed that age (P=0.001), level of triglycerides (P=0.006), history of smoking (P=0.011), and the duration of diabetes (P=0.019) were independently associated with left ventricle diastolic dysfunction.
CONCLUSIONS: Non-insulin dependent diabetes is an independent predictor of left ventricular diastolic dysfunction in patients without clinical evidence of structural heart disease. In patients with NIDDM, the age, history of smoking, plasma level of triglycerides, and the duration of diabetes were independently associated with the diastolic dysfunction of the left ventricle.