Aim: Diabetes mellitus is an important risk factor of peripheral artery disease. We analyzed the angiological and the hemorheological variables of diabetic patients with and without intermittent claudication.

Methods: 89 diabetic patients were classified into two groups: 20 patients (63.5±8.8 yrs, 53% men, 47% women) had claudication, 69 patients (65.5±9.3 yrs, 61% men, 39% women) were asymptomatic. Hand-held Doppler, transcutaneous tissue partial oxygen pressure (tcpO2) measurement, tuning fork test and 6-minute walk test were performed and hemorheological variables were also investigated including red blood cell aggregation.

Results: The ankle/brachial index (p<0.02), the tcpO2 measured at rest and at elevated leg (p<0.003) and the 6-minute walk test (p<0.0001) were significantly deteriorated in the diabetic population with claudication compared to the group without claudication. Higher red blood cell aggregation index and faster aggregate formation could be observed among patients with claudication (p<0.02). Despite the statistically better results of the asymptomatic group, 20% of these patients had characteristic results for a severe limb ischemia.

Conclusion: The intermittent claudication is a typical symptom of oxygen deficiency even in diabetic patients that is confirmed by our angiological tests. In a remarkable part of the asymptomatic patients severe limb ischemia could be detected. The increased red blood aggregation could deteriorate the peripheral circulation.