

The Tibial Arterial Calcification as a Predictor of Amputations and Outcomes of Endovascular Procedure in Diabetic Patients with Critical Limb Ischemia

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Aim: To evaluate the relationship between calcification in tibial arteries, frequency of re-interventions and amputations in diabetic patients with critical limb ischemia (CLI) after percutaneous transluminal angioplasty (PTA). **Materials and methods:** 30 diabetic patients with CLI were recruited in the study including 23 patients with chronic kidney disease (CKD). All patients underwent non-contrast CT scanning of lower extremities. The level of the tibial arteries calcium was calculated according to the standardized Agatston system using for scoring coronary calcium. All patients underwent PTA of the lower limb arteries. Follow-up assessment included clinical examination for wound healing (WH), limb salvage (LS) and duplex ultrasound surveillance after interventional procedure. **Results:** The patients were divided into 2 groups A and B according to tibial arterial calcification index: ranged from 1000 to 10 000 and greater than 10000, respectively. In group A were 16 patients (10 males), DM 1/2 type - 2/14, respectively; mean age - 59,3±8,2 years, mean HbA1c - 7,9±0,8; myocardial infarction in anamnesis was in 3 patients (18,7%), proliferative retinopathy was in 7 (43,7%). In group B were 14 patients (6 males), DM 1/2 type - 8/6, mean age - 51,0±14,0 years, mean HbA1c - 7,5±0,9; myocardial infarction in 2; stroke in 3; proliferative retinopathy in 12 (85%). CKD obtained in groups A/B: stage 1 (2/1), stage 2 (4/1), stage 3 (1/2), stage 4 (2/4), stage 5 (0/6). Severe neuropathy in groups A/B was diagnosed in 10 (62,5%) / 12 (85,7%), respectively. Chronical limb ischemia according Rutherford classification in group A/B were: 5/7 patients with 6 category, 5/5 with 5 category, 4/1 with 4 category, 2/1 with 3 category. After PTA residual stenoses (>50%) in treated arteries in group A were: in 3 (18%) and in group B 7 (50%), respectively. During 1-year follow-up in group A 7 treated sites of restenoses and occlusions documented by DU and 3 of them with recurrent symptoms and re-intervention, in 1 case femoro-popliteal bypass was performed. In group B there were 11 treated site restenoses and occlusions accompanied by symptoms recurrence and 11 re-interventions were performed. In group A vs. group B there were 4 vs. 4 minor amputations, no major amputation in group A vs. 3 in group B, LS rate was 100% vs. 78%, WH rate was 70% vs. 41%, respectively. **Conclusion:** Extensive arterial calcification in diabetic patients with CLI due to CKD is associated with poorer outcome after PTA and high risk of amputations.