Objective: To show effectiveness of endovascular procedures in patients with critical lower limb ischemia (CLI), caused by lesions of iliac and femoropopliteal-tibial segments of arteries.

Materials and Methods: From March 2013 to June 2016 68 patients with multilevel lower extremity arterial occlusive disease underwent 81 endovascular procedures. The mean age was 68 years (range: 39-82). Most patients were male (60 males, 88.2%). According to the Fontaine grading, 26 patients had persistent rest pain and 42 patients had minor tissue loss. Iliac lesions were defined according to the TASC II Type A 7 patients, type B 4 patients, type C 2 patients, type D 12 patients. Femoropopliteal lesions TASC II Type A 4 patients, type B 9 patients, type C 6 patients, type D 18 patients.

Risk factors for atherosclerosis and associated diseases. The most commonly associated cardiovascular risk factors were hypertension (100%), smoking (59%), dyslipidaemia (73.6%), coronary artery disease (76.3%), Smoking (68.4%), diabetes (31%). Totally 40 hybrid interventions were performed (2 patients underwent procedures on both extremities). PTA/Stent procedure. All procedure were performed in our fixed-imaging operating room suite or cardiac catheterization laboratory by vascular surgeons. Patients with preoperative renal insufficiency were routinely given oral acetylsalicylic acid before interventions and patients with severe azotemia were hydrated preprocedure and postprocedure with sodium bicarbonate solution. Selective angiography was performed with the patient under local anesthesia through a contralateral, retrograde, or ipsilateral antegrade common femoral artery approach using 6F or 6F sheaths. No popliteal punctures were used for vascular access. Lesions were crossed with platinum-tipped (0.018, 0.014) or hydrophilic wires (0.035, 0.018, 0.014) and balloon angioplasty was performed under systemic anticoagulation. Subintimal angioplasty was used to traverse occluded SFA lesions in 5 cases. Balloon catheter diameter was chosen to match the nondiseased artery adjacent to the lesion. A selective approach to the use of Nitinol self-expanding stents was used for flow-limiting dissections or when angioplasty alone did not produce a satisfactory result (residual stenosis of >30% or a flow-limiting dissection), for SFA. For iliac lesions always stenting self-expanding or balloon expanding stents. Postprocedure, all patients were given a loading dose of clopidogrel (300 mg) and maintained on 75 mg per day for 6 to 12 weeks. Patients also received 325 mg of aspirin on the day of the dose of clopidogrel (300 mg) and maintained on 75 mg per day for 6 to 12 weeks. Patients also received 325 mg of aspirin on the day of the dose of clopidogrel (300 mg) and maintained on 75 mg per day for 6 to 12 weeks. Patients also received 325 mg of aspirin on the day of the dose of clopidogrel (300 mg) and maintained on 75 mg per day for 6 to 12 weeks.

Results: primary technical success in group with A, B, C TASC II aortoiliac lesions was 100%, with D TASC II aortoiliac lesions was 91.7%. In group with infrapopliteal lesions overall primary technical success was 91.9%. Regression of ischemia was marked in all patients. The average growth of the ankle-brachial index (ABI) was 0.3. During one year follow-up period 3 major amputations were performed (5.8% of follow-up patients), all in cases of above knee interventions with one recanalized tibial artery. Limb salvage rate was 94.2% without CLI signs recurrence.

Case: Occlusion terminal aorta and iliac artery

Kissing stenting aorta bifurcation

Results after 2 years

Conclusions: endovascular interventions are effective, minimally invasive treatment for CLI. Endovascular procedures such as angioplasty with or without stenting should be seen as a treatment of choice in patients with CLI for limb salvage.