

# Endovascular treatment in critical limb ischemia - "When inflow is enough"

 **Krešimir Gabaldo**<sup>1,2,\*</sup>,  
 **Tomislav Krčmar**<sup>3</sup>,  
 **Marijana Knežević Praveček**<sup>1,2</sup>  
 **Domagoj Mišković**<sup>1,2</sup>,  
 **Ivan Bitunjac**<sup>1,2</sup>,  
 **Ivica Dunder**<sup>1</sup>,  
 **Antonija Raguž**<sup>1</sup>,  
 **Blaženka Miškić**<sup>1,2</sup>,  
 **Katica Cvitkušić Lukenda**<sup>1,2</sup>

<sup>1</sup>General Hospital "Dr. Josip Benčević", Slavonki Brod, Croatia

<sup>2</sup>Josip Juraj Strossmayer University of Osijek, Faculty of Dental Medicine and Health Osijek, Osijek, Croatia

<sup>3</sup>University Hospital Centre Zagreb, Zagreb, Croatia

**KEYWORDS:** critical limb ischemia, gangrene, amputation, inflow endovascular revascularization.

**CITATION:** *Cardiol Croat.* 2024;19(3-4):147. | <https://doi.org/10.15836/ccar2024.147>

**\*ADDRESS FOR CORRESPONDENCE:** Krešimir Gabaldo, Opća bolnica "Dr. Josip Benčević", Andrije Štampara 42, HR-35000 Slavonki Brod, Croatia. / Phone: +385-98-1398-810; Fax: +385-35-201-700 / E-mail: [kresimir.gabaldo@gmail.com](mailto:kresimir.gabaldo@gmail.com)

**ORCID:** Krešimir Gabaldo, <https://orcid.org/0000-0002-0116-5929> • Tomislav Krčmar, <https://orcid.org/0000-0003-4689-1673> • Marijana Knežević Praveček, <https://orcid.org/0000-0002-8727-7357> • Domagoj Mišković, <https://orcid.org/0000-0003-4600-0498> • Ivan Bitunjac, <https://orcid.org/0000-0002-4396-6628> • Ivica Dunder, <https://orcid.org/0000-0002-3340-7590> • Antonija Raguž, <https://orcid.org/0000-0002-7032-2852> • Blaženka Miškić, <https://orcid.org/0000-0001-6568-3306> • Katica Cvitkušić Lukenda, <https://orcid.org/0000-0001-6188-0708>

**Introduction:** Critical limb ischemia (CLI) is a clinical syndrome characterized by chronic ischemic at-rest pain, ulcers, or gangrene in one or both legs attributable to objectively proven arterial occlusive disease<sup>1</sup>. Patients with CLI have a one-year risk of amputation greater than 25%. Endovascular treatment is preferred as the first option of revascularization treatment because of lower morbidity and mortality compared to open surgery<sup>2</sup>. The main goal of the treatment is to establish flow through at least one vessel to the foot. CLI is often associated with multilevel disease usually requires outflow (tibial) revascularization as well as treating inflow disease. It remains unclear whether revascularization of both inflow and outflow vessels yields better outcomes than treating only inflow vessels in patients with critical limb ischemia<sup>3</sup>.

**Case report:** We present the case of 75-year-old male patient with CLI presented with non-healing ulcer of right foot. Risk factors for peripheral artery disease were diabetes, hypertension, and previous stroke. WIfI (Wound, Ischemia, foot Infection) index was 2-2-0 which addressed high risk of amputation. MSCT scan showed superficial femoral artery (SFA) occlusion in inflow region, while in outflow region both tibial arteries were occluded, and a peroneal artery was patent. We performed an SFA intervention with a good result in inflow region. In 3 months, follow-up the ulcer healed completely.

**Conclusion:** Concomitant inflow and outflow revascularization in CLI did not offer an advantage over just inflow revascularization in reducing the rate of amputation, total death, target lesion revascularization, if there is at least one patent artery in tibial region.

RECEIVED:  
October 15, 2023

ACCEPTED:  
October 27, 2023



## LITERATURE

1. Novo S, Coppola G, Milio G. Critical limb ischemia: definition and natural history. *Curr Drug Targets Cardiovasc Haematol Disord.* 2004 Sep;4(3):219-25. <https://doi.org/10.2174/1568006043335989>
2. Kinlay S. Management of Critical Limb Ischemia. *Circ Cardiovasc Interv.* 2016 Feb;9(2):e001946. <https://doi.org/10.1161/CIRCINTERVENTIONS.115.001946>
3. Bosanquet DC, Glasbey JC, Williams IM, Twine CP. Systematic review and meta-analysis of direct versus indirect angiosomal revascularisation of infrapopliteal arteries. *Eur J Vasc Endovasc Surg.* 2014 Jul;48(1):88-97. <https://doi.org/10.1016/j.ejvs.2014.04.002>