

**Z. Ruzsa<sup>1</sup>, B. Nemes<sup>1</sup>, I. Ungi<sup>2</sup>, J. Toth<sup>3</sup>, A. Katona<sup>2</sup>, A. Huttli<sup>1</sup>, B. Olivier<sup>4</sup>, B. Merkely<sup>1</sup>, <sup>1</sup>Semmelweis University, Heart Center - Budapest - Hungary, <sup>2</sup>University of Szeged - Szeged - Hungary, <sup>3</sup>County Hospital of Kecskemet - Kecskemet - Hungary, <sup>4</sup>Quebec Heart and Lung Institute - Quebec – Canada:**

## **Invasive treatment of the critical hand ischaemia: long term results**

### **Abstract: P5213**

#### **Invasive treatment of the critical hand ischaemia: long term results**

**Authors:**

Z. Ruzsa<sup>1</sup>, B. Nemes<sup>1</sup>, I. Ungi<sup>2</sup>, J. Toth<sup>3</sup>, A. Katona<sup>2</sup>, A. Huttli<sup>1</sup>, B. Olivier<sup>4</sup>, B. Merkely<sup>1</sup>, <sup>1</sup>Semmelweis University, Heart Center - Budapest - Hungary, <sup>2</sup>University of Szeged - Szeged - Hungary, <sup>3</sup>County Hospital of Kecskemet - Kecskemet - Hungary, <sup>4</sup>Quebec Heart and Lung Institute - Quebec - Canada,

**Topic(s):**

Peripheral artery disease - Interventions

**Citation:**

European Heart Journal ( 2017 ) 38 ( Supplement ), 1086

**Background:** Critical hand ischemia (CHI) of the upper extremity is rarely encountered due to highly developed collaterals of the hand. The main cause of acute CHI (aCHI) is thromboembolic, while the main cause of chronic CHI is atherosclerosis (cCHI).

**Purpose:** The aim of this prospective registry was to assess the feasibility, safety and outcomes of percutaneous transluminal angioplasty and thrombolysis in the treatment of CHI.

**Methods:** 94 patients (age 60.7±16.4 years) were treated with CHI between 2012 and 2015 in three cardiovascular centers. In aCHI the primary therapy was thrombus aspiration and local thrombolysis, while in cCHI balloon angioplasty and stent implantation. Stent implantation was done only in flow limiting dissections and significant recoil. The patients with clinical driven restenosis were treated with drug eluting balloons and drug eluting stents. We have examined the procedural and clinical success, the rate of major adverse events (MAE), target lesion revascularization (TLR) and vascular complications at one year and at long term follow up. All patients underwent Doppler ultrasonography and physical examination during follow up.

**Results:** Eighteen patients (19.2%) were treated with aCHI and 76 patients (80.8%) with cCHI. Clinical symptoms were: isolated rest pain in 84 (89.4%), digital ulcer or gangrene in 10 (10.6%) patients. The cause of CHI was atherosclerosis and/or thrombosis in 60 (63.1%), embolism in 10 (10.6%), trauma in 2 (2.1%), postprocedural 18 (19.1%) and vasculitis 4 (4.2%) patients. Technical and clinical success rate of the intervention was 95.7% (90/94) and 87.2% (82/94). Thrombolysis was done in 55.5% (10/18) of patients with aCHI and mechanical thrombectomy in 44.4% (8/18) 11 patients. Angioplasty was performed in subclavian (n=31, 33%), axillary (n=13, 13.8%), brachial (n=26, 27.6%), radial (n=30, 31.9%), ulnar (n=22, 23.4%), interosseal (n=3, 3.2%), palmar arch (n=9, 9.6%) and in one case in digital arteries (n=1, 1.1%). Stent implantation was done in 44 cases (46.8%). Multilevel (n=29, 30.8%), unleveled (n=6, 6.4%) and singular (n=59, 62.1%) dilatations were performed.

The rate of access site complication was 2.1%. Long term MAEs occurred in 66 patients (70.2%) at long term follow-up. Long term target lesion revascularization rate was 18%. In two patients thoracic sympathectomy was necessary and 2 patients underwent minor finger amputation (1.9%).

**Conclusions:** Angioplasty of the hand vessels for critical hand ischemia is a feasible and safe procedure with acceptable rates of technical success and hand healing. Major adverse events are frequent due to high rate of severe comorbidities.