Angioplasty of the hand arteries in critical hand ischaemia. Zoltán Ruszász, Zoltán Ruszász, Karoly Totó, Zoltán Jambrík, Nandor Kovacs, György Szabo, Levente Molnár, Kálmán Hittl, Béla Merkely

1Semmelweis University, Budapest, Hungary, 2Bács-Kiskun County Hospital, Kecskemét, Hungary, 3Semmelweis University of Budapest, Budapest, Hungary

Background: Critical hand ischaemia (CHI) of the upper extremity is rarely encountered. Axillary, brachial and below-the-elbow (BTE) disease is often asymptomatic due to highly developed collaterals, but in diffuse-multiple and thrombotic disease CHI can develop. The aim of this prospective study was to assess the feasibility, safety and outcome of percutaneous angioplasty (PTA) in the treatment of CHI.

Methods: Twenty-one patients (age 72 ± 13 years; 6 females) were treated with angioplasty in 2011 (16 pain at rest; 2 non-healing ulcer; 3 gangrene) due to axillary-brachial and pure BTE artery disease. We examined the procedural and clinical success and the rate of major adverse events (MAE) and vascular complications.

Results: One patient had Takayasu arteritis and 3 patients had symptomatic radial artery occlusion after transradial PCI in the investigated population. Six patients (n = 6, 29%) had subacute occlusion and 11 patients had chronic disease (n = 15, 71%). Multilevel (n = 8, 38%), unilevel dilatations (13, 62%) and in 3 cases parallel dilatations were performed (n = 3, 14%). Angioplasty was performed in the axillary (n = 6), brachial (n = 12), radial (n = 5), ulnar (n = 8), intersosseus (n = 1) and in palmar arch (n = 2). Technical success rate was 95% (2021). Successful mechanical (Rotax, n = 1, 17%) and aspiration thrombectomy (n = 5, 83%) was performed in subacute cases, before angioplasty (n = 6, 100%) and stenting. Technical success rate was 94.7% (4820). In 3 patients angioplasty was performed in all cases (15, 100%), and additional stenting was necessary in 6 cases (40%). PTA was unsuccessful in one patient (1/21, 5%). The hand-healing rate in the patients with gangrene and non-healing ulcer was 100% (5/5), and the relief of the pain was observed in 20 patients (2021, 95%). Two patients (n = 2, 9.5%) underwent secondary procedures due to symptomatic restenosis. The MAE rate was 0% during follow-up. One vascular complication (5%) occurred in the investigated population (radial artery perforation successfully treated with compression bandage).

Conclusions: Angioplasty of the hand vessels for CHI is a feasible and safe procedure with acceptable rates of technical success and hand healing.

Acute Outcomes For A Below The Knee Use Of A Novel Balloon Catheter First In Man Clinical Study

Dierk Scheiner

1Parl-Krankenhaus Leipzig, Leipzig, Germany

Background: The Chocolate PMF Study will confirm device safety and assess the occurrence of vascular and procedural complications after treatment with the novel Chocolate PTA balloon catheter. Methods: Angioplasty for peripheral vascular disease is often associated with acute complications following inflation and deflation of a standard balloon. Such complications are commonly considered to be related to vessel trauma and often require bailout stenting. The Chocolate PTA Balloon Catheter (developed by Quatro Vascular, Singapore) distributed by TriReNe Medical, CA is a novel balloon catheter with a constrained stricture to allow for uniform inflation and rapid deflation. The attributes of the constrained balloon are designed for modulated dilatation and creation of small-balloon “pillows”, intended to minimize vessel damage. The first in man use of this novel device has been described. Acute outcomes include: technical success (< 50% residual stenosis without flow-limiting dissection), rate of bailout stenting, and occurrence/severity of dissection and the occurrence of in-hospital major adverse events (MAE defined as TLR, death, or major amputation). All treatment angiograms are independently reviewed by a core lab to confirm vascular outcomes after treatment with the Chocolate Balloon. Clinical and Duplex ultrasound follow-up at 1, 6, and 12 months is ongoing.

Results: The Chocolate Balloon has been used in the first 22 patients (58% CLD) to treat BTK target lesions (average length 11cm). The Chocolate device was used successfully in a diverse range of BTK vessels (AT 48%, PER 14%, Trunk only 14%, Trunk to PER 14%, Trunk to PT 5%). Technical success was obtained in all cases. Technical Success is 100%. Bail-out stenting is 0%. No flow-limiting dissection has been reported for any Chocolate case. No in-hospital or 30 day MAEs has been reported. 6 Month MAE and Patency data will be included in presentation.

Conclusions: These initial cases verify that the Chocolate Balloon is safe for use. These early data also present compelling evidence to suggest that the design of the Chocolate Balloon is effective in reducing proctor.

Subintimal Angioplasty (SIA) or Bypass Surgery(BG) in CLI Patients With TASC II Type C/D Lesions. Mid to long term Clinical outcome

Sherif Sultan, Niamh Hyens

1Western Vascular Institute, Galway, — Please Select —, 2Western Vascular Institute, Galway, Ireland

Background: Of 1076 patients referred with PVD from 2002 to 2007, 206 SIAs in 190 patients and 128 bypass grafts in 119 patients were enrolled in the study. All patients had rest pain and/or tissue loss.

Methods: Primary endpoints were survival free from amputation and sustained clinical improvement. Secondary endpoints were major adverse events (MAE), the binary restenosis rate, freedom from TLR, and a special quality-adjusted life year (QALY) endpoint (Q-TWIST) that incorporated both length and quality of life to evaluate treatments.

Results: Five year, clinical improvement was sustained in 82.8% of the SIA group versus 62.6% of the BG patients (p=0.016). Five year all-cause survival was similar for SIA (78.6%) and BG (80.1%; p=0.734), as was amputation-free survival (SIA 72.9% versus BG 71.2%; p=0.976). Hyperfibrinogenemia (p=0.009) and C-reactive protein (p=0.019) had negative effects on survival without amputation. Five year freedom from re-bypass restenosis rates were 72.8% for SIA versus 65.3% for BG (p=0.700). While the 5-year freedom from TLR rates (SIA 85.9% versus BG 72.1%, p=0.262) were not statistically significant, the risk of MAE (p<0.002) and length of hospital stay (p<0.0001) were significantly reduced. Q-TWIST significantly improved (p<0.001) and cost-per-


1Heart Institute, University of Ulsan College of Medicine, Asan Medical center, Seoul, Korea, Republic of Korea

Background: Lower ankle-brachial index (ABI) was associated with increasing coronary artery disease (CAD) risk and poor prognosis. But the association between the severity of CAD and the level of ABI is not well understood. Methods: We prospectively enrolled 2,531 consecutive patients who admitted for coronary angiography. All patients underwent ABI during hospitalization period. We classified as Group I (normal ABI defined as >1.0), Group II (mildly low ABI defined as 0.71-0.9), Group III (moderately low ABI defined as 0.41-0.7) and Group IV (severely low ABI defined as ≤0.41), according to ABI values.

Results: The mean age was 62.8±9.2. The distribution of severity of coronary artery disease were normal (n=314, 12.4%), 1-vessel (n=728, 28.8%), 2-vessel (n=570, 22.5%) and 3-vessel (n=919, 36.3%). Among them, Group I (n=2,178, 86.1%), Group II (n=156, 6.2%), Group III (n=170, 6.7%) and Group IV (n=27, 1.1%) were identified. Multiple linear regression analysis showed that ABI was significantly associated with the severity of CAD (β±SE=0.13±0.04, p<0.001). The lower ABI group showed more severe CAD compared with normal ABI group (Table 1.)

Conclusions: The lower level of ABI was strongly associated with more severe CAD. The ABI might be a valuable indicator of severity of CAD.

Relationship between improvement of skin perfusion pressure, clinical outcomes and wound blush after successful endovascular treatment

Makoto Utsunomiya, Yoshinori Nagashima, Masato Nakamura, Kaoru Sugi

1Toho University Ohashi Medical Center, Tokyo, Japan, 2Toho University Ohashi medical center, Tokyo, Japan, 3Toho university, Ohashi Medical Center, Tokyo, Japan

Background: Several reports have been published of the acceptable patency and limb salvage rates following infra-popliteal interventions for the treatment of critical limb ischemia (CLI). However, the optimal angiographic endpoint of endovascular therapy (EVT) remains unclear. The aim of this study was to assess the relationship between the appearance of wound blush as an angiographic endpoint, improvement of skin perfusion pressure (SPP) and clinical outcomes.

Methods: “Wound blush” was defined as contrast opacification of the vessels around the wound in digital subtraction angiograms obtained immediately after the EVT through the catheter introduced into the popliteal artery. We analyzed the data of 77 consecutive patients (93 limbs) with ischemic ulcers classified as Rutherford category 5 or 6, who...