**Peripheral Vascular Intervention (Non-carotid, Non-neurovascular)**

(TCTAP A-096 to TCTAP A-113)

**TCTAP A-094**

Assessment of Differences in Degree of Elongation Between Stents by Coronary CT Angiography

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**Background:** Stent elongation during percutaneous coronary intervention (PCI) has been recently reported. At our hospital, bench test using phantom confirmed different degree of stent elongation in different stents and post balloons. We assessed the degree of stent elongation using the coronary CT performed for follow-up after PCI.

**Methods:** Total of 104 consecutive patients with 158 lesion from coronary CT performed for follow-up after PCI from January 2012 to May 2013 were assessed. CT image was analyzed, and stent length were calculated which were compared to the actual stent size.

**Results:** Due to reasons such as stent overlap, the stent length of 93 lesion could not be calculated. The remaining 65 lesions were divided into Cypher stent group and other stent group. The average stent elongation was 1.9±1.4% in Cypher stent group, and 6.4±3.7% in other stent group with statistically significant difference. (P<0.001).

**Conclusion:** The understanding of stent characteristics in regards to degree of stent elongation is needed for effective PCI.

**TCTAP A-095**

Increased Risk of Cardiac Contusion in Cardiac Arrest Patients Resuscitated with Mechanical Chest Compression Device

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**Background:** Mechanical chest compression devices (mCCD) for cardiopulmonary resuscitation (CPR) have been developed to offer a potential advantage over manual chest compressions. However, contemporary evidence from human randomized controlled trials did not demonstrate increased survival in patients treated with mechanical chest compressions for cardiac arrest. We hypothesised that use of mCCD during CPR might result in cardiac contusion. The aim of our study was to evaluate cardiac damage in patients who survived circulatory arrest and were treated with use of mCCD.

**Methods:** A single center, prospective study of consecutive patients treated with use of mCCD LUCAS 2 (Medtronic, Minneapolis, MN, USA). In non-survivors an autopsy was requested and specimens were studied for macroscopic and histologic signs of cardiac contusion. Autopsy findings were compared to a control group of autopsies of patients resuscitated without use of any mCCD.

**Results:** A total of 12 patients (64.5±10.3 years, 87 % males) were treated with mCCD. One patient was discharged from hospital and is still alive, the remaining 11 patients died. An autopsy was performed in 8/11 (73%). Fifteen patients (63.9±16.4 years, 67 % males) resuscitated without use of mCCD were posthumously screened for cardiac contusion as controls. There was a significant difference in the occurrence of post-CPR myocardial contusion at the autopsy (3 of 8 patients vs. 0 of 15 controls; p = 0.03).

**Conclusion:** To our best knowledge this is a first proof that mechanical chest compressions can cause significantly higher occurrence of cardiac contusion than manual chest compressions.

**TCTAP A-096**

Percutaneous Revascularization as an Emergency Strategy in Acute Occlusions of the Peripheral Arteries

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**Background:** Acute arterial occlusion in an extremity must be treated as a medical emergency since not only the affected limb is endangered, but the life of the patient as well. The cause of acute arterial occlusion is an embolism or in situ thrombosis. The most common source of embolism is the heart from which about 30% of the cardiac emboli obliterate the bifurcation of the femoral artery and about 4/5 of all embol involve the extremities. Differentiation between thrombosis and embolism can be extremely difficult but for acute treatment, however, it is of little relevance. On complete occlusion without adequate collaterals, the presentation is characterized by “the six Ps”: pain, pallor, pulselessness, paresthesia, paralysis and prostration. The situation bears high morbidity and mortality as emergent operations is associated with high risk.

**Methods:** We describe 7 patients (3 females and 4 males) mean age 65 presented in ER of our hospitals (Holy Family Hospital - Ospedale Sacra Famiglia; Hospitallier Order of St. John of God; Italy and SBAL Yambol within Bulgarian Cardiac Institute) - with clinical signs of acute peripheral artery occlusions (in the period January 2011- November 2013). In two the signs were for the upper limb, in four the lower limbs and in one acute abdomen. In five of the patients there were ECG signs of atrial fibrillation. In one the occlusion of the left popliteal artery (Fig.2.a) occurred immediately after orthopaedic intervention on the same leg. In one of the patients with acute occlusion of the right brachial artery a surgical disobliteration (Fogarty balloon) was performed, but the symptoms reappeared after 4 hours from the interventions (Fig. 1a). In all 7 patients we performed angiography that revealed total thrombotic occlusion of the affected limb artery in 6 patient and in one the occluded artery was the superior mesenteric. After collegial evaluation with the vascular surgeon we performed percutaneous recanalization of the occluded artery.

**Results:** The angiography demonstrated occlusion of right brachial artery in two patients, thrombotic occlusion of the left popliteal artery in two patients, thrombotic subtotal occlusion of the proximal right femoral superficial artery in one and occlusion of superior mesenteric artery in another patient. The recanalization procedure was preceded by standard antithrombotic pharmacological preparation (heparin in 4 patients and bivalirudin in the rest 3, IIb/IIIa inhibitors in 5, DAP in all 7.

**Conclusion:** This report demonstrates that the treatment of acute arterial occlusions implicit a good knowledge of the symptoms and the causes, effective collaborations with the vascular surgeon and quick diagnosis, especially with arterial angiography as it is still gold standard. Moreover, the angiography can easily shift to therapeutic procedures at a good amount of the cases. The percutaneous recanalization in the hand of experienced team and with the availability of the all needed materials for peripheral recanalization procedures seems to be safe and with a high success and low complication rate.

**TCTAP A-097**

Prevalence of Coronary Artery Disease in Critical Limb Ischemia Patients Undergoing Endovascular Therapy in Asian Population

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**Background:** Peripheral vascular disease (PVD) is known to be a risk factor of significant coronary artery disease (CAD). The aim of this study was to analyze the prevalence of CAD in patients of critical limb ischemia undergoing endovascular therapy (EVT) in a series of Asian population.

**Methods:** A total of 286 consecutive critical limb ischemia (CLI) patients (pts) were treated by EVT. A total 252 pts [male 76.1%, age 67.4±10.4] who underwent coronary angiography (CAG) before or after EVT were enrolled between November 2004 and October 2012. CAD was defined as angiographic stenosis ≥ 50% and significant CAD as ≥ 70% stenosis.

**Results:** At baseline, the incidence of hypertension was 70.6%, diabetes 73.0%, dyslipidemia 12.6%, cerebrovascular disease 17%, chronic kidney disease 23.0% and atrial fibrillation 9.1%. Among the study population, 58% of pts had wounds (including DM foot, 49.2%), gangrene 9.1%, claudication 11.9%, rest ischemic pain 21.4% and Buerger’s disease 3.1%. CAG results showed that the prevalence of CAD was in 71.0% (172/252) and significant CAD in 57.5% (145/252). Left main disease was in 8.3% (21/252), multi-vessel disease 35.7% (90/252), and chronic total occlusion 11.5% (29/252). Among pts with significant CAD, 16.2% (41/252) of pts had history of previous percutaneous coronary intervention (PCI) and 28.9% of Pts (73/252) received PCI during admission for EVT. A total 78.6% (114/145) of significant CAD pts with CLI underwent PCI.

**Conclusion:** In this study, 57.5% of pts with CLI undergoing EVT had significant CAD and 78.6% of them underwent PCI showing that advanced PVD was highly associated with significant CAD.