Conclusions: The MF® is a new technique which seems promising to treat RAAs. Collateral branches can be covered without compromising the flow and risk of renal infarction. It is a safe procedure with a very low complications rate. Larger study is ongoing.

TCT-508

RENALE ANGIOPLASTY AND STENTING. LIMITATIONS, ROLE OF EMBOLIC PROTECTION DEVICES

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Background: Despite good immediate and long-term results, post procedural deterioration of the renal function (RF) may occur after Renal Artery Angioplasty and Stenting (RAAS) in 20-40 % of the patients, which limits the immediate benefits of the technique. Atheroembolism seems to play an important role. We evaluate feasibility and safety of RAAS utilizing a distal protection device (DPD) to reduce the risk of atheroembolism and avoid deteriorations of the RF.

Methods: 171 RAAS performed under DPD in 151 hypertensive patients (M:102). Mean age: 65.2 ± 10.8 yrs with atherosclerotic renal artery stenosis (20 bilateral). 11 pts had solitary kidneys, 62 renal insufficiencys. We used occlusion balloon (n = 46) or filters (n = 125). We recently experimented and treated 12 patients with a new filter the Fibernet (Lumen Biomedical Plymouth MN) which can capture particles of 40μ in diameter removed without compromising the flow. Generated debris removed and analyzed. Blood pressure and serum creatinine levels followed. Techniques of RAAS under protection, limitations will be discussed.

Results: Immediate technical success: 100 %. Visible debris aspirated with PercuSurge from all patients. Mean particle number: 98.1 ± 67.6μ (38-620μ). With current filters debris were removed in 80 % of the cases. With the Fibernet visible debris were removed in all cases. Mean debris surface area: 121μ². Mean number of particles 28-60μ: 2136 ± 776, 690μ. We observed one acute RF deterioration. Mean follow-up: 32.2 ± 17 months. Mean creatinine level remains constant during follow-up. At 6 months (131 patients) 95 patients stabilized, 35 with baseline renal insufficiency improved and we had only one RF deterioration (1 %) in a patient with moderate renal insufficiency. At 2 years (105 patients) 73 stabilized, 28 improved and we only had 4 RF deterioration (4 %).

Conclusions: This study demonstrates the feasibility and safety of DPD during renal interventions to protect against atheroembolism and seems to avoid RF deterioration after the procedure and in the long-term. Indications will be discussed. Improvements in DPD for renal stenting are mandatory. Randomized studies are awaited.

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TCT-509

Treatment of Acute Pulmonary Embolism with Rheolytic Thrombectomy

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Background: Percutaneous rheolytic thrombectomy with AngioJet catheter can be applied in patients with cardiogenic shock or severe right ventricular dysfunction due to massive pulmonary embolism. The aims to report a single center experience in applying rheolytic thrombectomy treatment of massive pulmonary embolism.

Methods: Percutaneous rheolytic thrombectomy was performed in 20 patients with acute massive pulmonary embolism between September 2009 and November 2013. All patients had contraindications against systemic thrombolytics. Twenty patients (a mean age of 58.4 ± 15.3 years, female n=7 (one of them 22 week of pregnancy) underwent percutaneous rheolytic thrombectomy with AngioJet Xpedior Catheter. Cardiogenic shock was present in 4 patients (shock index ≥1), severe right ventricular dysfunction was present in 16 patients, Troponin mean value 0.069 ± 0.176 ng/mL and Brain Natriuretic Peptide mean value 330.7 ± 87 ng/L. Selective thrombolysis mean dose 30 mg of tissue plasminogen activators was given to 11 patients.

Results: The rheolytic thrombectomy procedure was technically successful in 18 cases. The perfusion systolic and mean pulmonary pressures improved from mean 57.9 ± 15.8 mmHg to 48.2 ± 14.7 mmHg (systolic) and from mean 34.3 ± 7.56 mmHg to 28.9 ± 6.99 mmHg (mean) (p < 0.001). The shock index decreased from 0.91 to 0.735 (p=0.001). All patients survived in hospital stay, hemothysis was noted in 2 patients (7.2%) and required transfusion and transient renal failure requiring dialysis in 4 patients. Right ventricular diastolic diameter decreased from mean 3.69 ± 0.57 cm at baseline, to 3.1 ± 0.33 cm 24 hours after rheolytic thrombectomy, to 2.78 ± 0.31 cm at one month, 2.73 ± 0.32 cm at six months ± 2.68 ± 0.37 cm at one year of follow up. From 15 patients at one year follow-up period, four patients demonstrated evidence of mild cor pulmonale. The pregnant woman successfully delivered a full-term newborn.

Conclusions: Percutaneous rheolytic thrombectomy using the AngioJet catheter is an effective treatment method for massive pulmonary embolism when systemic thrombolysis is contraindicated. More data with the comparison of this method and systemic anticoagulation therapy in the treatment of acute PE are required.

TCT-510

Treating Patients With Massive Pulmonary Embolism By Local Fibrinolysis, Rotational Thrombus Fragmentation And Thrombus Aspiration

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Background: In patients with massive pulmonary embolism the treatment choices are systemic fibrinolysis and surgical embolectomy as both methods are proved to reveal significant improvement in perfusion and hemodynamic shock. In one third of patients systemic fibrinolysis is contraindicated and surgical treatment is high risk and not widely available. A feasible alternative of those treatments are percutaneous catheter techniques.

Methods: All 20 patients were with PE and hemodynamic instability defined as a systolic arterial pressure < 90 mm Hg or drop of systolic pressure of ≥ 40 mm Hg for over 15 min or need for catecholamine administration, and echocardiographic evidence for RV dysfunction. We used right or left common femoral vein for access site with insertion of 8 Fr sheath. Hemodynamic assessment was obtained before and at the end of the procedure. After insertion of 5 Fr Ptgial catheter consecutively in the right and left main branch a local administration of alteplase 25 mg was performed through the Ptgial catheter. With 0.035 inch guidewire through the pigtail a rotational thrombus fragmentation was performed. After the catheter directed thrombolysis and rotational thrombus fragmentation a precise selective angiography was made with a 8 Fr guiding catheter JR in all segmental branches of the pulmonary artery with diameter above 6 mm. A meticulous thrombus aspiration was then performed in all segmental branches that were involved through the same catheter.

Results: From the analyzed 20 patients 63% were male with a mean age of 54 years.

The in-hospital survival was 92.7% as only one patients died due to lung infection. In 24 hours after the procedure there was an increase in both O2 saturation (91.5% vs 96.2%, p < 0.001) and pO2(66.4 vs. 96.5 mm Hg, p < 0.001). The right ventricular basal diameter decreased (48 mm vs. 38 mm, p < 0.001) and TAPCE was increased (13 mm vs. 20 mm p=0.001). The systolic (70 mmHg vs. 51 mmHg p=0.03) and mean (45 mmHg vs. 34 mmHg, p=0.001) pulmonary artery pressure also decreased. At 6 months follow-up all patients were alive with NYHA ≤ II class heart failure.

Conclusions: The described technique is effective and save method for treatment of high risk patients with PE.

TCT-511

Catheter directed thrombolysis and mechanical thrombectomy pulmonary embolism

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Background: Percutaneous thrombectomy and catheter directed thrombolysis (CDT) represent well established techniques for treatment of submassive pulmonary embolism (SPE). The purpose of CDT is to dissolve thrombus and to restore the lumen without causing distal embolization as fast as possible.

Methods: We have enrolled in 2011-2013 our patients with SPE in a prospective register and we have analysed our patients clinical, interventional and echocardiographic data. We have examined the efficacy and safety of CDT in the treatment of SPE. The access site for SPE was the femoral. Cava filters were implanted from jugular or from femoral veins. After the sheath advancement, occlusions were passed with a 0.035 guidewire and CDT was started with Alteplase over a pig tail catheter for 12-24 hours. After 24 hours, control pulmonary angiography was performed and the CDT was maintained when the thrombus burden was flow limiting or the pulmonary pressure has not decreased with 50%. When the CDT was not successful, manual thrombectomy and thrombus fragmentation was performed with a 7F guying and pig tail catheter. Postoperatively, patients were treated with systemic anticoagulation, compression hose, and interval follow-up.

Results: 26 patients were treated with a mean age of 52.5±14.9 years. CDT was successful after the first post-operative day in 19 patients (73%) but in 7 patients (27%) thrombus aspiration and thrombectomy was performed after failed thrombolysis. In two patients (7.2%) caval filters were implanted. Good angiographic and clinical outcome was achieved in 25 patients (96.15%). The invasive pulmonary pressure has dropped from 60.7± 18.67 to 19.7 ± 12.36 Hgmm after the procedure (p < 0.05). Echocardiography parameters were normalized in 25 patients (96.15%).
30 day mortality occurred in one patient (3.85%) due to paradox embolism and massive hemoptysis. Access site complications occurred in 2 patients (7.7%).

Conclusions: Submassive pulmonary embolism has excellent results with catheter directed thrombolysis, however additional mechanical thrombectomy and angioplasty is necessary in several patients to achieve good clinical outcome.

TCT-512
Treatment of Massive Pulmonary Embolism with Percutaneous Rheolytic Thrombectomy: Hospital and Follow-up results
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Background: Massive Pulmonary Embolism (MPE) is an important cause of death around the world. In unstable patients (pts), Percutaneous Rheolytic Thrombectomy (PRT) is a treatment option, especially in those unable for surgical thrombectomy or with absolute contraindications for fibrinolysis. We are reporting retrospective in-hospital and late outcome of unstable pts treated with PRT.

Methods: Between December 2009 and April 2013 in two university Hospitals in Buenos Aires, Argentina, we included 14 consecutive pts with MPE according to the American College of Chest Physicians guidelines and confirmed by multislice computed tomography and doppler ultrasound (US), moderate to severe right ventricular (RV) dysfunction and/or submassive PE, anaemia, and immobility. All pts (77.7%) (10 males and 4 females) were treated with PRT and before 30 days one patient died and no bleeding was reported. During 25.7 +/- 21 months of follow-up global mortality was 28.5% (none cardiac related) and 2 pts showed evidence of mild cor pulmonale.

Results: Mean age was 64.5 +/- 14.3 years, 60.7% were male, with BMI 21.2 +/- 14.1, previous malignant neoplasia in 14.2%, chronic obstructive pulmonary disease (COPD) in 25.7%, and Miller Score and systolic pulmonary pressures improved significantly (P<0.01) from 4.34 +/- 1.38 to 3.22 +/- 1.47 and 45 +/- 14.8 to 32 +/- 14.7 mmHg respectively. Right ventricular function improved at 3 months after discharge (P<0.01). 71.4% of pts showed evidence of mild cor pulmonale.

Conclusions: Percutaneous Pulmonary Rheolytic thrombectomy was safe and effective for the treatment of these high risk patients. Long-term outcome was related to the underlying pathology.

TCT-513
Ultrasound – Assisted Catheter Directed Thrombolysis in Massive and Sub-Massive Pulmonary Embolism: A Meta-analysis
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Background: There are limited therapeutic options for high risk patients with massive or sub-massive pulmonary embolism. The use of ultrasound-assisted catheter directed thrombolysis(UA-CDT) has shown to be particularly promising in various small studies. We aimed to conduct a meta-analysis of the available published studies.

Methods: An extensive time unlimited literature search using MEDLINE, EMBASE & Cochrane databases using MeSH key words ‘pulmonary embolism’, ‘ultrasound’ and ‘catheter-directed’ identified 7 studies including a total of 240 patients. Of these 197 patients underwent use of EkoSonic catheter directed thrombolytic therapy (UCDT) for massive or sub-massive PE. Hemodynamic measures including mean & systolic pulmonary artery pressure, RV-LV ratio, heart rate and cardiac index were assessed before and after therapy. Meta-analysis was performed using Cochrane Collaboration Review Manager (version 5.1). Effect size was estimated using random effects model and mean difference with 95% confidence intervals were calculated.

Results: One hundred and thirty three patients were treated with UCDT, Massive & bilateral PE was reported in 74(30.8%) & 152(63.3%) patients respectively. UCDT resulted in a significant reduction in PA systolic (mean -15.2±2.2mmHg [95% CI -22.4- -8.0]), mean pulmonary artery pressure (mean -9.3±5.3mmHg [95% CI -13.03- -5.68]), in addition to a 24% increase in cardiac index. The RV size, assessed by the ratio of RV to LV dimensions, was reduced with UCDT(mean -0.35±0.5% [95% CI -0.42- -0.28]), & the heart rate decreased by 16.9 beats/min [95% CI -26.46 - -7.34]. The Miller pulmonary artery occlusion score (in 87 patients) showed a significant reduction of 10.12 points (95% CI -12.21 - -8.02). Thirty & 90-day all-cause mortality was 3.1% (6/197) & 12.2% (23/197), at 3 months respectively.

Conclusions: This was largest meta-analysis to-date evaluating the impact of UCDT on massive & sub-massive PE. UCDT is associated with significant improvements in hemodynamic measures of RV & LV function. The procedure appears to be safe & associated with low 30 & 90-day mortality compared to RIETE(8.65%) and ICOMPER registries(17.4%).

TCT-514
Percutaneous Transluminal Angiography of the Subclavian Arteries. Long-Term Follow up
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Background: To review feasibility, safety and long-term results of subclavian artery angioplasty.

Methods: 407 patients (males: 245, mean age: 66.1 ± 12 years) underwent percutaneous treatment for subclavian artery (SA) occlusive disease (stenosis: 295, occlusion: 112). Left: 312, Right: 95, Innominate Artery: 28. Euthorax: elongomatus: 397, others: 10 (Tokayasu: 6) Mean % stenosis 83.4 +/- 7.8. Mean lesion length: 23.9 +/- 8.7 mm Indications for treatment were upper limb ischemia (ULI) (n =177) Vertebrobasilar insufficiency (VBI) (n=157), associated VHI and UIH (n=123), coronary steal syn- drome (n=20) asymptomatic patients with severe coronary disease (n=73) 39 patients had associated Vertebro Artery stenosis, 81 carotid stenoses. 337 prevertebral lesion, 45 post vertebral, both 25. Access: femoral (n=287), brachial (n=81), both (n=39). "Pull through technique" 8 cases. An isolated balloon angioplasty was performed in 59 cases and 348 stents were implanted (balloon expandable: 276, self expandable: 72). Results: Technical success was obtained in 387 lesions (95 %) 100% for stenoses. Only 92 occlusions were recanalized (82%). Four perioperative events occurred (1.2%): 1 in-hospital stroke, 1 T.I.E. & cardiac arrest. Improvement >12.21 - -8.02). Thirty & 90-day all-cause mortality was 3.1% (6/197)& 4.6%(7/152).

Conclusions: P.T.A. is currently the treatment of choice for subclavian artery stenosis. It is a safe and effective procedure associated with low risks and good long-term results. Stents seem to limit the restenosis rate and improve long-term results.

TCT-515
PUDENDAL ARTERY ANGIOPLASTY FOR THE TREATMENT OF COMPLEX ERECTILE DYSFUNCTION IN MALES
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Background: Erectile Dysfunction (ED) is an important and growing health problem. It is estimated that more than 200 million men (between the age of 40 ~ 70 years) suffer from ED. The real prevalence could be much higher as it is under reported and under treated. Out of the many etiologies, 80 % of cases are because of vasculogenic origin. Venous leak and Arterial Inflow problems (usually pudendal artery stenosis) are the most common etiologies. In patients who fail PDE 5 inhibitors therapy (Cenflo: 50mg), vasculogenic cause should be strongly suspected.

Methods: The work is done by excluding the endoocular, urological and psychological causes and then subjecting these patients to a penile Doppler study (after intra cavernosal injection of papaverine). In patients where the peak systolic penile velocity is less than 20 cm/sec, pudendal artery stenosis is strongly suspected. These patients then undergo a selective angiography for identification of pudendal artery stenosis. If the stenosis is found they are subjected to super selective pudendal artery cannulation and angioplasty or stenting using drug eluting balloon (DEB) or zotarolimus eluting stents (DES). Patients are followed up at 3, 9, 12 months and then after every year by Duplex scans.

Results: 36 consecutive worked up patients of complex ED with pudendal artery stenosis underwent pudendal artery angioplasty (with DEB or DES). The procedure was successful in all patients There were no death, perineal or penile gangrene. The mean penile velocity increased from base line of 16 cm / sec to 44.30.58 cm /sec at 3, 6, 12 months respectively. Improvement >12.21 - -8.02). Thirty & 90-day all-cause mortality was 68 %, 74.5% respectively. Improvement >12.21 - -8.02). Thirty & 90-day all-cause mortality was 68 %, 74.5% respectively. Improvement >12.21 - -8.02). Thirty & 90-day all-cause mortality was 68 %, 74.5% respectively.

Conclusions: Angioplasty of focal stenosis of internal pudendal artery by DEB or DES appears to be a very promising therapy for male erectile dysfunction. It is safe, feasible and leads to sustained (36 months) improvement of male erectile dysfunction in about 75 % of carefully selected cases. However still many cases are ineligible for this procedure . Larger studies are required to be able to accept it as a standard therapy to treat male Erectile Dysfunction.

TCT-516
THE MULTILAYER FLOW MODULATORY STENT FOR THE TREATMENT OF PERIPHERAL AND VISCERAL ANEURYSMS
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Background: Arterial aneurysms (An) are traditionally treated surgically, but more and more by interventional procedures with a high technical success rate, but some problems are not solved like protection of aneurysm rupture, endoleaks, stent...