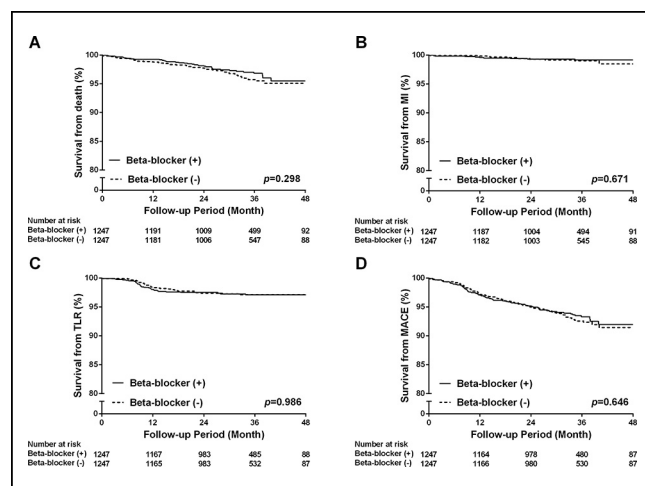


METHODS A population of 4,266 patients with SCAD with normal LV function who were treated by percutaneous coronary intervention (PCI) was evaluated. Clinical characteristics and discharge medications were examined. All-cause death and acute myocardial infarction (AMI) were observed for a median of 34.9 months.

RESULTS Patients' average age was 64 ± 10.1 years and 2782 (65.2%) were men. Mortalities among 2794 (65.5%) patients who received Beta-blockers and 1472 (34.5%) who did not were 75 (2.7%) and 54 (3.7%) patients, respectively. Beta-blockers did not show a significant benefit in mortality and AMI. Unadjusted hazard ratio (HR) for Beta-blocker was 0.724 (95% CI 0.510 to 1.028, $p=0.071$), adjusted HR was 0.729 (95% CI 0.507 to 1.047, $p=0.087$). Diabetes mellitus (HR 1.689, 95% CI 1.167 to 2.445, $p=0.005$) and renal failure (HR 5.244, 95% CI 3.015 to 9.120, $p<0.001$) were an independent predictor of mortality. Renal failure (HR 7.516, 95% CI 3.130 to 18.049) was an independent predictor of AMI.

CONCLUSION Beta-blockers are clearly indicated in heart failure or AMI with a protective effect against death. However, in SCAD patients with normal LV function after PCI, no beneficial effect of Beta-blocker was observed on mortality rates and AMI.



PERIPHERAL VASCULAR INTERVENTION (NON-CAROTID, NON-NEUROVASCULAR) (TCTAP A-168 TO TCTAP A-175)

TCTAP A-168

Efficacy of Catheter Directed Thrombolysis for Stent Occlusion in Superficial Femoral Artery in Chronic Period

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BACKGROUND Efficacy of stent for long chronic total occlusion (CTO) in the superficial femoral artery (SFA) has been hampered by stent occlusion. Balloon dilatation with or without aspiration was applied in treatment of stent occlusion. However, it frequently offers suboptimal result and accompanies distal embolization, which complicates situation.

METHODS Since Aug 2014, catheter directed thrombolysis (CDT) first strategy was introduced for patients with stent occlusion after multiple stent implantations for long SFA CTO. Patients who presented with acute limb ischemia and underwent stent implantation within 6 months were excluded.

RESULTS CK and D dimer did not elevate before CDT in all patients. Consecutive 4 patients were treated by catheter directed thrombolysis (CDT) first strategy. CDT was performed without balloon dilatation at first session. Urokinase (720000 IU / day) was continuously administered for several days (2 - 5 days). At second session, antegrade blood flow was restored with residual stenosis in all patients. Subsequent ballooning provided sufficient dilatation without distal embolization.

CONCLUSION CDT first strategy is a safe and effective approach for stent occlusion after multiple stent implantations in long SFA CTO in chronic period. Further study is needed before this strategy will be accepted as standard therapy.

TCTAP A-169

Long-Term Outcomes After Percutaneous Transluminal Renal Artery Stenting for Atherosclerotic Renal Artery Stenosis in the Coronary Drug-Eluting Stent Era: A Japanese Single-Center Retrospective Study

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BACKGROUND We firstly examined the long-term outcomes after percutaneous transluminal renal angioplasty with stenting (PTRA) for atherosclerotic renal artery stenosis (ARAS) in a Japanese daily practice in the coronary drug-eluting stent (DES) era.

METHODS This retrospective, non-randomized, single-center study was conducted in October 2014. De novo 125 ARAS in 106 patients treated between September 2006 and February 2014 were enrolled. Primary clinical endpoint was the incidences of major cardiovascular cerebral renovascular events (MACCRE), comprising of cardiac death including unknown origin, onsets of acute coronary syndrome, stroke, and congestion, and induction of hemodialysis after PTRA. Predictors of MACCRE were analyzed using Cox proportional hazard model.

RESULTS As patient-base, a total of 98.1% had hypertension, 47.2% had diabetic, and 84.9% had coronary artery disease (CAD). Of CAD patients, 92.2% had treated using DES, 40.0% had previous MI, 25.6% had LMT disease, 34.4% had CTO lesions, 37.7% had BNP level ≥ 100 , 31.1% had estimated glomerular filtration rate (eGFR) < 45 , and 22.6% had multiple PAD. As lesion-base, a total of 64.1% had PSV ≥ 250 , 90.2% had RAR ≥ 3.0 , and 93.6% was stenting under the guidance of IVUS. Systolic and diastolic BP (SBP and DBP) before treatment ($167 \pm 25/80 \pm 14$ mmHg) had decreased at followed-up phase ($127 \pm 15/69 \pm 11$ mmHg; $P < 0.001$ for both SBP and DBP). Anti-hypertensive medication was similar at PTRA and at followed-up phase (2.2 ± 1.3 vs. 2.1 ± 1.2). A total of 87.7% had continued dual anti-platelet therapy. Estimated glomerular filtration rate (eGFR) before treatment (54.9 ± 16.6) were well preserved at followed-up phase (52.6 ± 19.7). The incidence of MACCRE was 12.6% with the mean follow-up period of $1,512 \pm 886$ days. Cumulative MACCRE-free ratio at 3 year was higher than 90% and at 5 year than 80%. On Cox regression analysis, eGFR at PTRA was the only independent predictor of MACCRE (hazard ratio: 1.01, 95% CI: 0.53-0.97, $p = 0.031$). In 9 cases of 80 cases, restenosis defined by stenosis $> 60\%$ and determined by renal artery duplex and/or angiography was detected.

CONCLUSION The present study firstly showed the long-term acceptable clinical outcomes with the favorable patency after stenting for ARAS in Japanese daily clinical practice under a high use ratio of IVUS.

TCTAP A-170

Examination of Carbon Dioxide Angiography with Cardiac Angiography Systems Lacking Digital Subtraction Angiography

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BACKGROUND Several reports suggest that carbon dioxide angiography (CDA) supported endovascular therapy (EVT) reduces for use of contrast media in patients with chronic kidney disease. Although CDA usually performed under the vascular angiography systems with digital subtraction angiography (DSA), not all hospitals have vascular angiography systems. In this study, we thought to evaluate the preset of CDA performed under the coronary angiography systems.

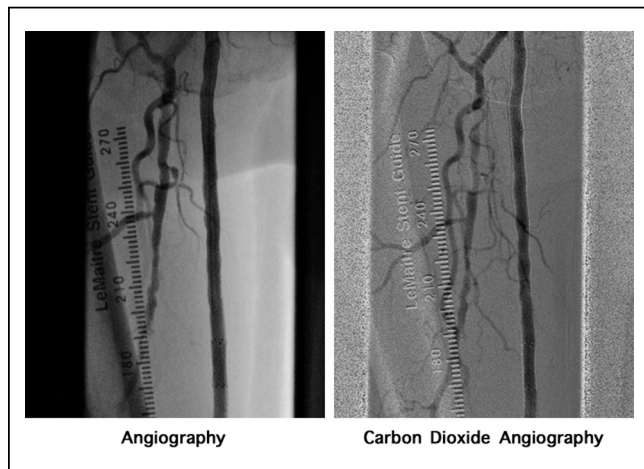
METHODS Toshiba Infinix Celeve CS was used as coronary angiography system, and Subtraction images were produced by manual DSA application. Constructed images were evaluated by contrast to noise ratio and visual estimation.

RESULTS After the evaluation of images, the following presets were recommended;

- Frame Rate - 15 frames/sec.
- Minimum Pulse Width - 5 msec
- Additional Frame Number - 10 images

In this condition, efficient images for EVT were produced.

CONCLUSION This examination proved that coronary angiography system could adapt CDA by using appropriate presets.



TCTAP A-171
Intermediate Clinical Outcomes After Endovascular Treatment for Proximal Subclavian Artery Disease - A Single Medical Center Experience in Taiwan

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BACKGROUND Subclavian artery disease can lead to disabling arm ischemia, angina, or vertebrobasilar insufficiency owing to subclavian steal syndrome. The objective of this study was to determine intermediate-term outcomes after percutaneous transluminal angioplasty (PTA) for localized obstruction of the proximal subclavian artery (SA).

METHODS Between March 2011 and October 2014, 21 patients (7 women; mean age, 65.8 ± 11.0 years) consecutively underwent PTA of severe (>75%) stenosis (n = 10, 45%) or occlusion (n=12, 55%) of the SA (18 left-sided, 82%). Clinical outcome was evaluated based on the results within 30 postoperative days (technical success rate, improvement in upper extremity ischemia, steal syndrome, and perioperative complications) and the results after 30 postoperative days (incidence of ischemic stroke and restenosis). The mean follow-up period was 653±311 days.

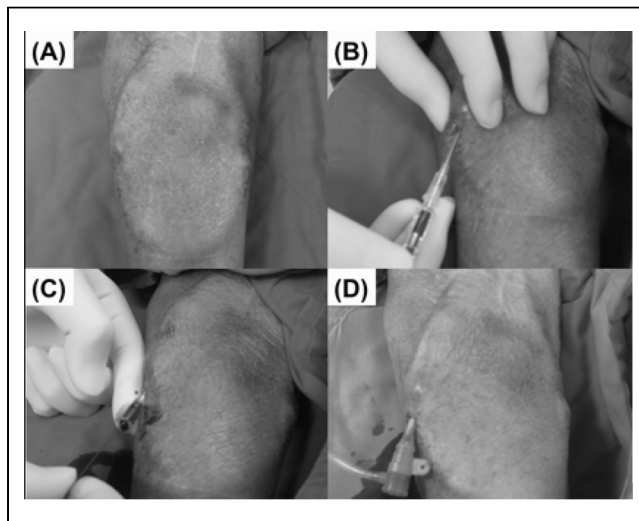
RESULTS The PTA approaches were mostly via the single access site (femoral artery) (n=15, 71.4%) and 5 patients (23.8%) via bilateral approach (femoral and brachial artery). 10 (47.6%) patients had clinical symptoms due to vertebrobasilar insufficiency and twelve (57.1%) had disabling arm ischemia and one (4.8%) had angina pectoris. We achieved technical success in every patient and all received stents. There was no procedure related death and the rates of stroke or myocardial infarct were 0% during the follow-up period. All were asymptomatic at one month post intervention. Primary patency rate was 95.4% at 6 months, 86.3% at one year, and 81.8% at two years.

CONCLUSION PTA with routine stenting of obstructive lesions of the proximal subclavian artery is not only an effective initial treatment, but is also successful over the intermediate-term. PTA with routine stenting should be considered the first choice in these patients.

TCTAP A-172
Feasibility and Safety of Right Heart Catheterization via Arteriovenous Shunts in Patients on Maintenance Hemodialysis: A Prospective Study

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BACKGROUND Trans-femoral and trans-jugular venous accesses are commonly used for right heart catheterization. For hemodialysis patients, arteriovenous shunts (including fistulas and grafts) are created for repeated punctures for hemodialysis access. Theoretically, cardiac catheterization via the arteriovenous shunts will have the advantage of lower puncture site complications and patients will be more comfortable. However, little is known about the feasibility and safety of arteriovenous shunts for right heart catheterization.



METHODS We conducted a prospective study to follow right heart catheterization procedures performed in hemodialysis patients via arteriovenous shunts. The procedure details and outcomes were obtained from the clinical, angiography, and hemodialysis records. The feasibility, success rate, complication rate, and procedure time were collected.

RESULTS Total 13 patients received cardiac catheterization via AV shunts. The indication for right heart catheterization was pulmonary hypertension work-up. Five patients were male (31%), and the median age was 69 years old (interquartile range: 58-77 years). Five AV shunts were native fistulas (5/13, 38%). All patients had complete measurement of hemodynamic profiles (procedure success rate: 100%). No puncture site hematoma, vascular dissection, or shunt acute thrombosis occurred during the procedure, at two days, and up to two weeks after the procedure. The median fluoroscopy time was 6.9 minutes (interquartile range: 4.3-9.9 minutes). The median contrast volume was 28 ml (interquartile range: 15-40 ml). All the patients had complete hemostasis after the right heart catheterization and were discharged from the cath room within one hour after the procedure.

CONCLUSION The AV shunts can be used as an alternative route for right heart catheterization with acceptable feasibility and safety.

TCTAP A-173
The Snorkel Technique for Endovascular Aneurysm Repair with Challenging Neck Anatomy

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BACKGROUND We have recently treated abdominal aortic aneurysms (AAAs) with challenging neck anatomy by endovascular aneurysm repair (EVAR) using the snorkel technique (SnT), and this study was evaluating the outcomes of EVAR with the SnT.

METHODS We retrospectively reviewed the charts of patients who underwent EVAR with the SnT between January 2012 and December 2013. All patients underwent EVAR under general anesthesia. Bilateral femoral arterial access was obtained through bilateral femoral cut-down to place the stent graft main body, and brachial arterial access was obtained percutaneously to perform the SnT.

RESULTS A total of six patients were treated by EVAR with SnT. Two patients were treated with unilateral SnT, 2 with bilateral SnT, and 2 with combined SnT and the endowedge technique. We attempted to preserve 10 renal arteries, and could successfully perform with these techniques for nine renal arteries. After complete deployment of the endograft, intraoperative angiography showed no type Ia endoleak. During the median follow-up of 14 months (range, 8 - 18 months), no deaths nor aneurysm enlargement occurred, and all treated renal arteries were patent without further intervention.

CONCLUSION Our findings suggest that the management of AAAs by EVAR with SnT could achieve an adequate proximal seal, and preserve renal artery perfusion in patients with unfavorable neck anatomy.