feasibility of radial approach to high-speed rotational coronary atherectomy (HSRCA) due to various technical reasons. Thus further studies are needed to evaluate the feasibility of transradial approach to HSRCA.
Methods: We conducted a retrospective chart review of all patients who underwent HSRCA at our institution from January 2005 through December 2012 and collected demographic, clinical and procedural characteristics. The patients were divided into two groups based on transradial or transfemoral approach to HSRCA and outcomes were evaluated during the index hospitalization and 30 days after the procedure. The primary endpoint was the success rate of the approach, which was defined as successful completion of the procedure in achieving less than 30 % residual stenosis without crossing over to any alternative approach. Secondary endpoints were major access site bleeding, other access site vascular complications such as pseudoaneurysm or arteriovenous fistula, time to discharge in hours after the procedure, periprocedural myocardial infarction (MI), ischemic cerebrovascular accident (CVA) or transient ischemic attack (TIA), and all cause mortality.
Results: A total of 30 patients in the radial group and 21 patients in the femoral group underwent HSRCA on 33 and 24 lesions respectively. There were no significant differences in the baseline demographic, clinical characteristics and procedural characteristics between the two groups. The primary endpoint was achieved in 29 (97%) and 15 (71%) patients in the radial and femoral groups respectively (p=0.015). There were no differences between radial and femoral groups in regard to major access site bleeding (3% vs. 5%, p = 1.00) group), vascular complications (0% vs. 5 %, p = 0.41), time to discharge in hours (45.0 ± 32.1 vs. 68.8 ± 64.4, p= 0.21), periprocedural MI (7% vs. 0%, p = 0.50), CVA/TIA (3% vs. 0%, p = 1.00) and all cause mortality (3% vs. 5 %, p = 1.00) respectively.
Conclusion: Transradial approach is a feasible and equally safe alternative to transfemoral approach for HSRCA.

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Radial and Femoral Percutaneous Coronary Intervention in an International Registry: Post-Hoc Analysis of the Deliver Study

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Background: DELIVER was a prospective, multicenter, all-comers registry to assess the deliverability of the Resolute Integrity™ zotarolimus-eluting stent (R-ZES). In-hospital clinical outcomes and resource utilization following radial and femoral access implantations are compared in a post-hoc analysis.
Methods: Patients undergoing percutaneous coronary intervention and deemed suitable for R-ZES implantation were enrolled and treated according to standard practice of the participating centers. The primary endpoint of the study was delivery success when R-ZES was used as the primary stent. Delivery success was defined as complete passage of the stent across the target lesion with full expansion of the stent to the desired diameter at the desired location. In-hospital clinical outcomes, procedural details, and resource utilization were collected. Target lesion failure (TLF) was the composite of cardiac death, target vessel myocardial infarction (MI), and clinically-driven target lesion revascularization. Procedural and in-hospital outcome comparisons of radial vs. femoral approach were adjusted using propensity scores.
Results: A high proportion of the population (n=7740 patients) had complex disease (71%; n=5490/7739), and the approach was radial in 46% (n=3564) and femoral in 53% (n=4128) of patients. The femoral group had significantly more patients who were female or had a prior MI, a prior coronary artery bypass graft, diabetes, renal insufficiency, or a history of hypertension (all p<0.001). The femoral group was also characterized by more complex lesion characteristics. Primary delivery success was high (98.9%, n=10617/10733 stents) and did not differ by approach (adjusted p=0.880). In-hospital clinical outcomes were low (TLF: 1.6%, n=122/7740) and did not differ by approach (adjusted p=0.275). Radial access was associated with lower hospital length of stay and procedure duration (both adjusted p<0.001), less contrast used (p=0.003), and fewer balloons and catheters used (adjusted p=0.010 and p<0.001).
Conclusions: R-ZES was found to be highly deliverable in a complex, all-comers, international population. DELIVER was not intended to compare R-ZES implantation access methods. The radial approach, however, was associated with lower resource utilization than the femoral approach after adjustment for differences in baseline characteristics.

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The Transradial Coronary Interventions Reduce the Diameter of Radial Artery Measured by Quantitative Artery Analysis in Follow-up Angiography

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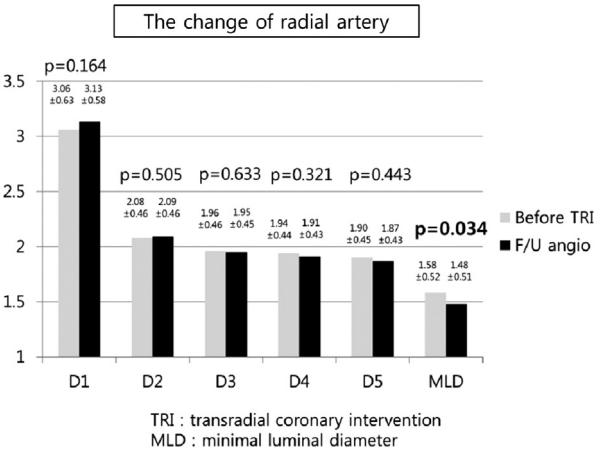
Background: The radial artery is currently regarded as a useful vascular access site for coronary procedures. But there is no known impact of transradial coronary intervention (TRI) regarding the change of radial artery diameter. There were no published data regarding the change of radial artery diameter by quantitative artery analysis after the TRI.
Methods: From June 2009 to September 2012, consecutive patients with normal Allen test underwent TRI and follow-up coronary angiography (FUCA) after TRI were enrolled. Retrograde radial artery angiography was performed before the transradial coronary procedure in all patients. We analyzed the radial images of initial angiography and FUCA. We divided radial artery from elbow to sheath tip into 5 parts (D1, D2, D3, D4 and D5) and analyzed radial artery diameter and minimal luminal diameter (MLD). The primary endpoint was the changes of radial artery diameter after TRI.
Results: Among total 613 patients underwent FUCA, 103 patients underwent FUCA via other site (femoral artery or opposite radial artery) and 189 patients had no images of radial artery or the difficulty to analysis due to poor images. Finally, total 321 patients underwent FUCA via same site were analyzed. Before TRI, initial MLD1 was 1.58±0.52 and diameters were 3.06±0.63, 2.08±0.46, 1.96±0.46, 1.94±0.44 and 1.90±0.45 (D11, D12, D13, D14 and D15). MLD2 of FUCA was 1.48±0.51 and diameters were 3.13±0.58, 2.09±0.46, 1.95±0.45, 1.91±0.43 and 1.87±0.43 (D21, D22, D23, D24 and D25). The changes of radial artery size were not significant statistically. (p>0.05) But the change of MLD was statistically significant. (MLD1 vs. MLD2 p=0.034).
Conclusion: The overall diameter of radial artery did not show significant changes after index TRI but TRI reduced MLD of the radial artery with statistical significance.



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Coronary Angiography Performed Using Radial Artery Approach with El Gamal Catheter: Comparison with Judkins Catether

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Background: the El Gamal is a very flexible, precurved catheter, with gentle curve, tapered soft tip, with two little side holes and a bigger hole on its top. It is available in three sizes: 1-2-3 (® Cordis). The El Gamal is a universal catheter used to perform angiography of both right and left coronary. It allows: the use of a single catheter, reduction in time of fluoroscopy and in medium contrast, easily crossing of the vessel tortuosity and it doesn't cause important vasospasm.

Aim: to compare coronary angiography performed using radial artery approach with El Gamal or Judkins catheter.
Methods: we compared 1000 patients who underwent coronary angiography, 500 examinations were performed using El Gamal technique and 500 using Judkins technique.
Results: Mean time of examination (minutes) after radial artery puncture: 5.7 minutes with the El Gamal and 6.8 minutes with the Judkins technique. Mean time of fluoroscopy (minutes): 3,8 minutes with the El Gamal and 3,9 minutes with the Judkins. Mean contrast medium (ml): 55 ml with the El Gamal, 62 ml with the Judkins. With the El Gamal technique the coronary angiography was performed using only one catheter in 74% of the patients, using two catheters in 10% of the patients and three or more catheters in 16% of the patients. With Judkins tecnique the coronary angiography was performed using two catheters in 84% of the patients, in 10% of the patients we used three or more catheters. Technical problems were: radial artery's spasm in 9% of the patients with the Judkins technique (2% with the El Gamal). Difficulty in crossing vessels' tortuosity in 9% of the patients with the Judkins' technique (6% solved using the El Gamal catheter), only 1% of the patient with the El Gamal. No complications occurred in both groups.
Conclusions: In our study this technique with only one El Gamal catheter is effective in 74% of the cases. It reduces the time of examination significantly and limits the time of fluoroscopy. It allows the saving of the catheters used and it's very useful in case of extreme vessels' tortuosity.

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Feasibility and Safety of Repeat Radial Artery Route for Coronary Procedures

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Objective: As there is growing interest in US for trans-radial angioplasty we want to see the feasibility, safety, success and complications of repeat radial artery route for coronary procedures.
Methods and Results: We retrospectively analyzed the data of patients who undergone repeat coronary through same radial artery route from Jan 2012 to Dec 2012 by two experienced operators from our institute. 137 patients undergone repeat same radial artery route for 161 coronary procedures with mean age of 54.2 ± 9.7 yrs and 21 females. Average procedure time for CAG was 8' 45" and for was PCI 19' 36" (excluding CTOs) . Average amount of contrast used for CAG was 45.2±15.6 ml and for PCI was 72±36.4ml. Maximum number of times in a pt transradial route used were 5. As this is nonrandomized study the same pt might have undergone CAG and PTCA either transradially or transfemorally over a period of time during the coronary procedures. Coronary procedures done through transradial route in a given pt were CAG+PTCA, CAG+CAG, PTCA+PTCA and MULTIPLE (>2 punctures) PROCEDURES . The no of pt, the mean of duration (days) between two transradial routes (minimum & maximum days) and success of procedure, in CAG+PTCA group of pts were 86, 168.3 and 100%, in CAG+CAG group of pts were 16, 667.2 and 100%, in PTCA+PTCA group of pts were 17, 751.9 and in multiple procedures group of pts 18, 328.1 respectively. Acute failures and/or complications concerned with transradial route occurred in 8 (10.9%) pts. No hematomas or infection or aneurysms at puncture site. In one pt (1.37%) we could not puncture radial artery, in one pt (1.37%) after arterial puncture wire passage was difficult, in two pts radial spasm, but relived with vasodilators & completed the PCI transradially (2.7% to nil) and in one pt (1.37%) guide support was not proper. Asymptomatic acute pulse occlusion in 3, but reappearance of pulse at 15 days in two of them (4.1% to 1.37%). Total failures were 4.1% (3 pts) and complications were 1.37% (one pt). So, overall failures and/or complications were 5.4% (4 pts). Failures and/or complications related to PCI occurred in 7 (9.59%) pts. Failures are mainly not able to cross the lesion (3 CTOs - 4.1%). In one CTO (1.37%) balloon could not be negotiated and in one calcific lesion (1.37%) stent could not be deployed. One pt (1.37%) developed mild CIN which improved with hydration. One pt (1.37%) developed acute stent thrombosis, repeat successful PCI done transradially.
Conclusion: Repeated transradial coronary procedures are safe with minimal complication and excellent success rates.

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ABSTRACT WITHDRAWN

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12 Months Clinical Outcomes of Transradial Coronary Intervention: Comparison of the Right and Left Radial Artery Approach

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Background: The radial artery (RA) approach for percutaneous coronary intervention (PCI) has several advantages such as reduction of bleeding risk, improvement of patients' convenience, and immediate ambulation as compared with the femoral artery approach for PCI. In RA approach for PCI, there are some anatomical and technical differences between right and left RA approach. The aim of this study is to evaluate the impact of the choice of the right or left RA approach on 12 months clinical outcomes in the patients undergoing transradial intervention.
Methods: A total of 1,653 consecutive patients undergoing PCI via radial were enrolled between November 2004 to October 2010 in Korean Transradial Intervention Registry. The patients were divided into two groups such as right approach group (n=792 pts) and left approach group (n=861 pts). To adjust potential confounders, propensity score matched analysis was performed using the logistic regression model (C-statics: 0.726). After propensity score match (PSM), total of 1,100 pts were enrolled for this analysis (MVS: n=550 pts, SVS: n=550 pts).
Results: After PSM, the baseline clinical and angiographic characteristics were balanced between two groups. However, contrast volume during procedure were larger in right approach group (259.3 ± 119.6 cc vs. 227.0 ± 90.7 cc, p-value <0.001), procedure time (49.2 ± 30.4 min vs. 55.4 ± 28.7 min, p-value=0.003) were longer in left approach group, and fluoroscopic time (22.5 ± 28.0 min vs. 17.1 ± 12.6 min) were longer in right approach group. After PSM, procedural and in-hospital complications were similar between two groups. After PSM, cumulative clinical outcomes up to 12 months including mortality, recurrent myocardial infarction (MI), revascularization, and stent thrombosis were similar between two groups.
Conclusions: In this study, the procedural efficacy including procedural time and contract volume increased in right artery approach. However, 12 months cumulative clinical outcomes were similar between two groups.

Table1. Clinical outcomes up to 12 months between right and left approach after PSM

Variable, N (%)	Right radial (n=550 pts)	Left radial (n=550 pts)	p Value
Mortality	21 (3.8)	26 (4.7)	0.456
Cardiac death	15 (2.7)	16 (2.9)	0.855
Recurrent Myocardial infarction	3 (0.5)	3 (0.5)	ns
Repeat Percutaneous Coronary Intervention (PCI)	25 (4.5)	27 (4.9)	0.776
Target lesion revascularization (TLR)	17 (3.0)	23 (4.1)	0.334
Target vessel revascularization (TVR)	25 (4.5)	27 (4.9)	0.776
Stent Thrombosis	5 (0.9)	0 (0.0)	0.062
MACE(Mortality, repeat PCI, MI)	44 (8.0)	53 (9.6)	0.339
MACCE (Mortality, repeat PCI, MI, CVA)	49 (8.9)	53 (9.6)	0.678