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Is the radial artery suitable for recatheterization?
C.M. Santos1, R. Cate2, R.C. Teles1, M.S. Carvalho1, L. Raposo1, P.A. Goncalves1, M.S. Almeida1, H. Vinhas2, H. Perera3, M. Mendes1.1Hospital West Lisbon (CHLO), Hospital Santa Cruz, Lisbon, Portugal; 2Hospital Garcia de Orta, Almada, Portugal

Purpose: Transradial approach (TRA) has become increasingly common for coronary angiography and intervention (CAPI) and a wealth of knowledge exists about its feasibility. Nevertheless radial injury and occlusion do occur and little is known about the success rate with its repeated use. Evidence of a long lasting use of the TRA might encourage a shift toward this access route. We aimed to evaluate the feasibility of a second TRA its predictors of failure.

Methods: In a dual centre prospective registry, patients who underwent a first procedure by right TRA were identified. Whenever a second coronary angiography was necessary during follow-up, and the interventionist’s clinical assessment was favourable, the right TRA was again used. We compared the rates of crossover to another access and sought predictors of crossover.

Results: From January 2009 to October 2012, 6392 patients (median age 66, interquartile range 16: 67% male; 37% due to ACS) who underwent a first procedure (36% PCI) by right TRA were identified; the crossover rate to another access was 5.8%. During the study period, a second TRA was performed in 686 of these patients in whom the interventionist clinical assessment was favorable: the crossover rate to another access was 6.9% and similar to the first TRA (Chi-sq p=0.267). Three independent predictors of failure in the latter group were identified by binary logistic regression, with the following adjusted odds-ratio (95% confidence interval): female sex 3.67 (1.98-6.8), use of 10 cm (vs. 25 cm) introducer sheath 3.52 (1.73-7.16) and previous valvular surgery 3.02 (1.06-8.61).

Conclusions: A second transradial approach is as feasible as the first. The use of shorter sheaths, female sex and previous valvular surgery patients reduce success in subsequent radial access.

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Admission hyperglycaemia and contrast induced nephropathy
A. Perkan, M. Cinquetti, F. Giannini, S. Santangelo, F. Pirozzi, G. Barbati, G. Vitrella, S. Rakar, A. Salvi, G. Sinagra. Cattinara Hospital, Department of Cardiology, Trieste, Italy

Aims: Admission hyperglycaemia is a frequent condition in ST elevation myocardial infarction (STEMI) associated with an increased risk of contrast induced nephropathy (CIN) after primary percutaneous coronary intervention (pPCI). We evaluate the possible different role of acute and chronic hyperglycaemia on CIN and the impact of its early spontaneous or pharmacologic normalization.

Methods and results: 679 STEMI patients treated with pPCI were enrolled in our prospective study. CIN was defined as an absolute serum creatinine increase and the impact of its early spontaneous or pharmacologic normalization. The crossover rate to another access was 5.8%. During the study period, a second TRA was performed in 686 of these patients in whom the interventionist clinical assessment was favorable: the crossover rate to another access was 6.9% and similar to the first TRA (Chi-sq p=0.267). Three independent predictors of failure in the latter group were identified by binary logistic regression, with the following adjusted odds-ratio (95% confidence interval): female sex 3.67 (1.98-6.8), use of 10 cm (vs. 25 cm) introducer sheath 3.52 (1.73-7.16) and previous valvular surgery 3.02 (1.06-8.61).

Conclusions: A second transradial approach is as feasible as the first. The use of shorter sheaths, female sex and previous valvular surgery patients reduce success in subsequent radial access.

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Clinical impact of off-label use of contemporary drug-eluting stents in the randomized TWENTE trial
H. Sen1, K. Terajung1, M.K. Lam1, K.G. Van Houwelingen2, M. Steen1, J.W. Louwerenburg1, F.H.A.F. De Man1, G.C.M. Lissen3, M.B. Nienhuis1, C. Von Birgelen1, Medical Spectrum Twente, Thoraxcenter, Department of Cardiology, Enschede, Netherlands; 2Ziekenhuisgroep Twente, Department of Cardiology, Almelo, Netherlands; 3Streekziekenhuis Koningin Beatrix, Department of Cardiology, Winterswijk, Netherlands

Purpose: Drug-eluting stents (DES) were initially used in simple lesions and low-risk patients (‘on-label’ indications). Nowadays, DES are mostly implanted ‘off-label’, however, there is limited knowledge about potential differences in outcome between indication groups.

Methods: We assessed this issue in the 1-year clinical outcome data of the randomized TWENTE trial (Xience V and Resolute) in 1387 patients. Off-label indications included: renal insufficiency; ejection fraction <30%; lesion length >27 mm; acute myocardial infarction (MI); >1 lesion/veinor >2 vessels treated; bifurcation, graft, in-stent restenosis, left main, thrombotic, and totally occluded lesions. Primary endpoint was target vessel failure, a composite of cardiac death, target-vein RELATED MI, or target-vein revascularization. Periprocedural MI was defined as MI ≤48 hours after PCI.

Results: Patients with off-label DES (n=1033; 74.5%) had more diabetes mellitus (22.9% vs. 17.5%; p=0.03), previous MI (35.9% vs. 22.3%; p<0.001), complex lesions (76.1% vs. 60.7%; p<0.001), and acute coronary syndromes (57.8% vs. 33.3%; p<0.001). Outcome was similar except for more target vessel-related MI in off-label DES (6.6% vs. 1.7%; p<0.001), which reflected more periprocedural MI (5.0% vs. 1.4%; p=0.003) that resulted in a higher target vessel failure rate (p=0.004). However, logistic regression analysis demonstrated absence of an independent association between off-label DES use and target vessel failure (adjusted HR 1.11; 0.95-1.20; p=0.73).

Conclusions: Despite significant differences in baseline data between patients with off-label and on-label DES use, 1-year clinical outcome was similar except for more periprocedural MI in patients with off-label DES use.

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Impact of multivessel disease in patients with chronic total occlusion on six-month angiographic and two-year clinical outcomes
S.W. Rha, B.G. Choi, S.Y. Choi, C.G. Choi, J.W. Kim, E.J. Kim, C.G. Park, H.S. Seo, D.J. Oh. Korea University Guro Hospital, Seoul, Korea, Republic of Korea

Background: Chronic total occlusion (CTO) intervention is still challenging because of the limited procedural success rate and higher recurrence. It is not clear whether the presence of multivessel disease (MVD) will negatively impact on angiographic and clinical outcomes following CTO intervention as compared with single vessel disease (SVD).

Methods: A total of 238 consecutive patients (pts) underwent CTO intervention were divided into two groups according to the number of treated vessel (MVD with CTO: n=149 pts, SVD with CTO: n=89 pts). Six-month angiographic and twelve-month clinical outcomes were compared between the two groups.

Results: The baseline clinical characteristics were balanced between the two groups except higher incidence of myocardial infarction (MI, 31.5 vs. 17.9 p=0.021) and a lower left ventricular ejection fraction (LVEF, 47.9±12.1% vs. 52.7±9.8%, p=0.003) in the MVD group. The overall procedural success rate, procedural characteristics and procedure related complications including perforation and dissection were not different between the two groups. Angiographic outcomes at 6 months and major clinical outcomes up to 24 months were similar.