

Results: Access site cross over was needed in 1 patient (0.002%), and conversion from sheathless guiding catheter to conventional guiding catheter in 1 patient (0.002%). Acute procedural success rate was 95.9%. The median duration of the procedures was 50min (IQR 41-65). The median time of fluoroscopy was 16.5min(IQR 12.7-23.6). The median contrast media use was 136ml (IQR 110-160). Guiding catheter-induced coronary artery dissection occurred in 1 patient.
Conclusions: Routine use of the Sheathless guide catheter for TRA in PPCI for STEMI is feasible with a low crossover rate and a high rate of procedural success.

TCT-272

Comparative Effectiveness of the Different Arterial Approaches "Transbrachial, Transradial and Transfemoral" in Percutaneous Coronary Interventions: Real-world Experiences

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Background: Up to our knowledge, there's no data investigating the three different approaches (Transbrachial (TBA), Transradial (TRA) and Transfemoral (TFA) for PCI. Coping with our daily needs for diversity of tools and approaches we explore our extensive experiences with the different PCI access.

Methods: This retrospective observational, single center trial investigated 4955 CAD patients underwent coronary revascularization through one of the studied approaches between April 2006 to June 2012. After application of inclusion and exclusion criteria. A total of 1102(22.2%), 2797(56.4%) and 1054(21.2%) patients were distributed through (TBA), (TRA) and (TFA) accesses respectively. All patients were retrospectively evaluated regarding the predefined primary safety endpoint (In hospital Cardiac death, MI, stroke, major access site hematoma and/or bleeding) and efficacy endpoints (Access and procedure success/time, contrast volume, cross over rate and access site complications).

Results: Over the 7 year study period, our results showed that both TBA and TRA associated with higher procedural success compared with TFA (P=0.0001) with no significant difference in access success and time. Both TBA and TRA groups have shorter fluoroscopy time (P=0.0001). Regarding the safety endpoints, our results showed that TFA patients have higher rate of MACE and In-Hospital cardiac death compared with TRA patients (p=0.008 and 0.01 for MACE and cardiac death respectively). Such difference is not encountered between TBA and either TRA or TFA groups, however there was no significant difference in MI, stroke, emergency CABG. TFA group has significantly higher incidence of major access site hematoma (p=0.0001). Both TBA and TFA groups have higher proportions of access site pseudoaneurysm (P=0.001).

| Primary Safety and efficacy Endpoints between TBA, TRA and TFA. | | | | |
|---|---------------------------|--------------------------|--------------------------|--------------------|
| | TBA (1102) | TRA(2797) | TFA(1054) | P .value |
| MACE(%) | 21(1.9) ^{ab} | 33(1.2) ^a | 27(2.6) ^b | 0.008* |
| Cardiac Death (%) | 1(0.1) ^{ab} | 2(0.1) ^a | 6(0.6) ^b | 0.001* |
| Acute MI | 20(1.8) | 32(1.1) | 22(2.1) | 0.06 |
| Stroke(%) | 2 (0.2) | 3 (0.1) | 5(0.5) | 0.07 |
| Major access site Hematoma (%) | 3(0.3) ^a | 4(0.1) ^a | 13(1.2) ^b | 0.0001* |
| Aneurysm/Pseudo aneurysm (%) | 8(0.7) ^a | 1(0.01) ^a | 5(0.5) ^a | 0.001* |
| Procedure Success(%) | 1080(98) ^a | 2752(98.4) ^a | 1008(95.6) ^b | 0.0001* |
| Procedure time(min) | 132.39 ± 9.5 | 131.53 ± 7.3 | 131.4 ± 7.8 | 0.09 |
| Fluoroscopy time (min) | 21.1 ± 14.5 ^a | 21.8 ± 15.7 ^a | 34.7 ± 26.9 ^b | 0.000* |
| Contrast Volume(mL) | 111.9 ± 60.1 ^a | 124 ± 66.3 | 171 ± 87.5 | 0.000 ¹ |

Data are presented as mean±SD, or the number of patients/arteries (percentage); TBA=transbrachial approach; TRA=transradial approach; TFA=transfemoral approach; *The same superscript letter denotes column proportions which do not differ significantly from each other at the .05 level. Different superscript letters means significant difference between its column proportions.

Conclusions: Based on the previous data, transbrachial approach for PCI could be a good alternative for the standard of care approaches with considerable safety and efficacy.

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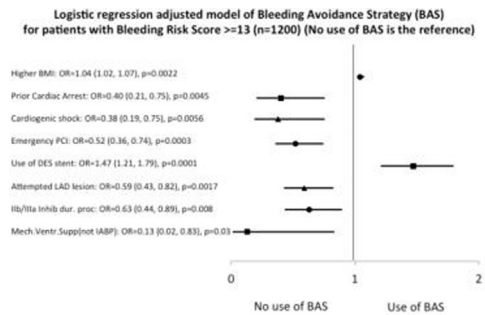
Patient Characteristics that Deter use of a Bleeding Avoidance Strategy during PCI

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Background: Use of bleeding avoidance strategies (BAS) such as transradial access, bivalirudin, and femoral closure devices have been shown to lower bleeding events after PCI but used most often in those at lowest risk of bleeding. Patient characteristics that deter use of BAS in higher risk patients for bleeding are not clearly established.

Methods: Patients undergoing PCI at four University of Pittsburgh Medical Center affiliated hospitals were enrolled in a hospital-based registry and followed prospectively beginning in October 2011. Bleeding events and bleeding risk score (BRS) were defined by NCDR criteria and definitions. Low risk of bleeding defined as score <13 and high risk of bleeding as score ≥13.

Results: Among 2178 consecutive PCI patients (66.7% for acute coronary syndrome), 978 patients had a calculated BRS of <13 and 1200 patients ≥13. BAS use more likely in the low risk group (91.1 vs 83.0%, p=0.0001). Specific strategy used in the low and high-risk groups were femoral access closure only in 23.5 vs 28.2% (p=0.01), bivalirudin only in 21.6 vs 21.1% (p=0.78), transradial access only in 4.1 vs 3.8% (p=0.68), and a combination of BAS in 41.9 vs 30% (p=0.0001). Among the high risk group, logistic regression was used to determine the independent risk factors associated with use of BAS (Figure 1).



Conclusions: Utilization of a BAS has been increasingly advocated for especially in high-risk patients for bleeding. However, recognizing deterrents to utilization allows for understanding if use is even feasible and further studies are necessary to study the safety and efficacy of BAS in higher risk patients.

TCT-274

A Randomized Prospective Study of Same Day Discharge after Coronary Artery Stenting and Facilitated Femoral Hemostasis with a Closure Device

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Background: Despite advances in interventional cardiology, and that safety and feasibility of outpatient percutaneous coronary intervention (PCI) has been previously demonstrated, overnight stay after PCI remains the standard of care in the United States. The study aims to compare outcomes, patient satisfaction, and cost of same day (SD) vs. delayed hospital discharge (DD) after PCI-stenting and femoral hemostasis with a vascular closure device (StarClose or ProGlide).

Methods: Consecutive patients undergoing coronary angiography (n=2,480) at University of Southern California Hospitals were screened; 493 patients were consented for inclusion. Four hours following PCI, 100 patients were randomized to SD (n=50) or DD (n=50). Patients were followed for one month and patient satisfaction surveys completed at 24 hours and one-month post discharge. Cost savings were calculated based on Medicare payment rates.

Results: SD and DD groups were well distributed with similar baseline demographic and angiographic characteristics. Mean age was 58.1±8.8, 86% were male, 16% smokers, 44% diabetic, 41% had history of MI and 31% CRI. NSTEMI or unstable angina (UA) was the presentation in 30% of SD vs. 44% of DD patients (p=0.2) and all other patients had stable angina (SA) (70% in DD vs. 56% in SD, p=0.15). Multivessel stenting was performed in 74% and 60% of SD and DD groups, respectively (p=0.14). At 30 days post-discharge, the primary end point (death, myocardial infarction or repeat revascularization) occurred in one DD patient (2%) vs. two SD patients (4%), p=1.0. The secondary end points of

major non-CABG related bleeding occurred in one SD patient (GI bleed) and recurrent hospitalization in three patients of SD (6%) vs. one DD patient (2%), $p=0.62$. There were no vascular complications. Patient satisfaction scores were equivalent in both groups at all time points. SD was associated with \$1,200 savings per patient.

Conclusions: Same day discharge after uncomplicated single and multivessel PCI of patients with SA, UA and low risk NSTEMI facilitated by vascular device closure is associated with similar clinical outcomes, patient satisfaction and significant cost savings compared to traditional overnight hospital stay.

TCT-275

Incidence And Predictors Of Bleeding After Percutaneous Coronary Intervention Across Different Clinical Presentations

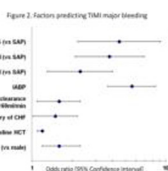
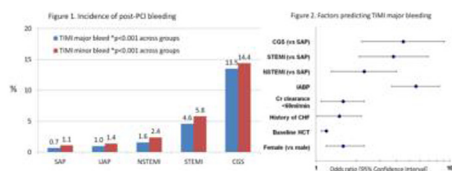
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Background: Although acute myocardial infarction (MI) and cardiogenic shock are known to predict post-percutaneous coronary intervention (PCI) bleeding, the association between post-PCI bleeding and the severity of clinical presentation has not been clearly defined. This study aims to compare the incidence and predictors of post-PCI bleeding across different clinical presentations.

Methods: The study included 23943 consecutive PCI patients categorized according to their clinical presentation: stable angina pectoris (SAP, n=6741), unstable angina pectoris (UAP, n=5215), non-ST-segment elevation MI (NSTEMI, n=8418), ST-segment elevation MI (STEMI, n=2721), and cardiogenic shock (CGS, n=848).

Results: There was greater use of pre-procedural anticoagulation, intra-aortic balloon pump and glycoprotein receptor inhibitors with increasing severity of clinical presentation. The incidence of Thrombolysis In Myocardial Infarction (TIMI) major and minor bleeding increases with severity of clinical presentation. (Figure 1) On multivariate logistic regression analysis, (Figure 2) NSTEMI, STEMI and CGS remain independently predictive of bleeding after adjusting for baseline and procedural differences, whereas UAP did not. In-hospital mortality corresponded with severity of clinical presentation, from 0.2% in SAP to 24.4% in CGS.

Conclusions: In patients undergoing PCI, the worsening severity of clinical presentation corresponds to an increase in incidence of post-PCI bleeding. The increased bleeding risk persisted despite adjusting for more aggressive pharmacotherapy and use of IABP with increasing severity of clinical presentation.



TCT-276

Safety of diagnostic transradial cardiac catheterization of outpatients under oral anticoagulation with Acenocumarol.

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Background: Increasingly frequent performing invasive cardiac procedures without removing oral anticoagulation, however the need for withdrawal of oral anticoagulants before transradial cardiac catheterization in patients chronically anticoagulated remains controversial. It is usually removed at least 48-72 hours before the procedure

and in selected patients, heparin is used as bridge therapy. We evaluate the efficacy and safety of performing transradial catheterization in outpatients without removal of warfarin.

Methods: 268 patients undergoing transradial cardiac catheterization. 40 patients chronically anticoagulated with Acenocumarol (Group A) were compared with the rest (Group B). The hemostasis technique was similar in both groups as a patent hemostasis assessed by plethysmography (elastic compression with a band during 2 hours). We assessed the development of complications after the removal of bandage while patients still were in laboratory and in first 24 hours. Radial patency was assessed by plethysmography and hematomas were classified according EASY classification. Bleeding and other complications were also recorded.

Results: Patients in Group A were older (72 ± 8 vs 65 ± 11 years old; $p=0.01$) without other difference in baseline characteristics. Atrial fibrillation (60%) was the main cause for warfarin and the mean INR at the time of procedure was 2.4 ± 0.5 . During the procedure there wasn't any remarkable complication and there wasn't difference in time for procedure between groups. When the bandage were removed, it was 1.8% of bleeding in Group B who required new compression (0% in Group A ($p>0.05$)) and only one radial occlusion (Group B). No difference in hematomas ≤ 5 cm (7.5% vs 6.6%, $p>0.05$). In first 24 hours, no early or late hematomas call for additional attendance and there was 1.8% late mild bleeding in Group B vs 0% in Group A. No cases with hematomas >10 cm or extended to the arm, no compartment syndrome and no other complications as fistulas, pseudoaneurysms, dissections or perforations.

Conclusions: Performing transradial diagnostic cardiac catheterization without withdrawal of oral chronic anticoagulation is safe, with low rates of thrombotic and hemorrhagic complications.

TCT-277

Which patients are still having PCI via the Femoral approach in centres that are default Radial centres? Results and insights from a single centre experience.

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Background: Increasingly the trans-radial route (TR) is preferred over the femoral route (TF) for PCI. However even in high volume default TR centres a small cohort of patients are required to undergo TF PCI. Our study examined the clinical, procedural characteristics and outcomes of patients undergoing PCI via the TF in a single high volume UK centre.

Methods: This was a prospective study examining the PCI procedure and outcomes of all patients undergoing PCI between Jan 2009 and Dec 2012. Patient demographics, procedure details, and outcomes were all collected from internal and national databases.

Results: 5379 patients were treated with 10.4% (n=561) of patients undergoing PCI via the TF and 89.6% via the TR. The TF group were more often female (35.8 vs. 24.6% when compared to TR cohort, $p<0.0001$), older (64.9 vs. 63.0yrs, $p<0.0002$), and lighter (80.7 vs. 83.7kgs, $p<0.0001$). There was a greater proportion of patients with a history of previous revascularization by PCI (27.5% vs. 18.1%, $p<0.0001$) or CABG (14.6 vs. 4.8%, $p<0.0001$) in the TF group. Cardiogenic shock and use of IABP was also greater in the TF group (7 vs. 1% and 6.5 vs. 0.5% respectively, $p<0.0001$). Complex procedures including use of rotational atherectomy (4.1 vs. 0.7%), saphenous vein graft PCI (9.1 vs. 3%) and chronic occlusion PCI (21.1 vs. 6.8%) were also performed more frequently in the TF group ($p<0.0001$ for all). In-hospital mortality (2.0 vs. 0.46%, $p<0.0001$), vascular complications (3.2 vs. 0.6%), $p<0.0001$ and bleeding (1.0 vs. 0.02%) were all more common in the TF group. PCI success was less common (88.2 vs. 94.6%) in the TF group despite similar number of lesions attempted (1.54 vs. 1.57, $p=ns$) and vessels treated (1.27 vs. 1.27, $p=ns$).

Conclusions: In a high volume default TR PCI centre the small cohort of patients that continue to have PCI via the TF route are more likely to undergo complex coronary intervention and have higher subsequent vascular complications and mortality. Best practice for such patients in future will require optimisation of pharmacotherapy strategies, procedural techniques and utilisation of emerging interventional equipment.

TCT-278

Radial arterial access with ultrasound trial.

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Background: Transradial cardiac catheterization reduces bleeding compared with femoral access, but the initial arterial cannulation can be difficult due to weak pulses, hypotension, calcification, obesity or peripheral vascular disease. Multiple attempts at