CONCLUSIONS TR-PCI has a substantial influence on UEF, as was measured with our sensitive score, with 56.8% of the patients having UED after the procedure. Therefore, special attention during follow-up regarding the upper extremity is justified, and should be implemented. Furthermore, there are indications that certain patients might be at higher risk and might benefit from slender radial techniques or, in a specific minor selection, a switch to transfemoral interventions. Our UED outcome might be very sensitive, which could be excellent for assessing the effect of hydrophilic catheter coating and other variables.

**CATEGORIES OTHER:** Vascular Access: Transradial

**KEYWORDS** Complication, Function, Percutaneous coronary intervention, transradial

**TCT-420**

The fluoroscopy time, door to balloon time, contrast volume use and prevalence of vascular access site failure with transradial versus transfemoral approach in ST segment elevation myocardial infarction: A meta-analysis

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**BACKGROUND** Transradial approach (TRA) for percutaneous coronary intervention has been shown to decrease access site complications, bleeding and mortality compared to transfemoral approach (TFA). However, concerns about higher access site failure rate and door to balloon time with TRA in ST segment elevation myocardial infarction (STEMI) remain because data from individual trials has been conflicting. It has led to slow adoption of TRA in STEMI patients compared to other indications.

**METHODS** The authors aimed to conduct the first comprehensive systematic review and meta-analysis in STEMI patients evaluating vascular access site failure rate, fluoroscopy time, door to balloon time and contrast volume use with TRA versus TFA. The Cochrane, CINAHL, clinicaltrials.gov, Embase and CENTRAL databases were searched for randomized trials comparing TRA versus TFA in STEMI patients. Trials not reporting data on at least one outcome of interest were excluded. Random effect models were used to conduct this meta-analysis with Stata software.

**RESULTS** Fourteen randomized trials comprising 3758 patients met inclusion criteria. The access site failure rate was significantly higher with TRA compared to TFA (RR 3.30, CI 2.16, 5.03). Random effect inverse variance weighted prevalence rate meta-analysis showed that access site failure rate is predicted to be 4% (95% CI 3-6%) with TFA versus 1% (95% CI 0.8-1%) with TRA. Door to balloon time (SMD 0.35 minutes, 95% CI 0.23-0.37 minutes) and fluoroscopy time (SMD 0.14 minutes, 95% CI 0.06-0.23 minutes) were also significantly higher in TRA. There was no difference in the amount of contrast material used with TRA versus TFA (SMD -0.05 ml, 95% CI -0.14-0.04 ml). Statistical heterogeneity was low in cross-over rate and contrast volume use, moderate in fluoroscopy time but high in the door to balloon time comparison.

**CONCLUSIONS** Cross-over rate is significantly higher with TRA compared to TFA in STEMI patients undergoing PCI. It is predicted to be 3-6% with TRA versus 0-1% with TFA. Fluoroscopy and door to balloon times are also modestly yet significantly higher with TRA but there is no difference in terms of contrast volume use. More research is needed to study outcomes in STEMI patients who require cross-over to alternate access site.

**CATEGORIES OTHER:** Vascular Access: Transradial

**KEYWORDS** Percutaneous coronary intervention, primary, Percutaneous coronary intervention, transradial, Percutaneous transfemoral approach

**TCT-421**

Radial Approach versus Femoral Approach with Vascular Closure Devices: Systematic Review and Meta-analysis

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**BACKGROUND** Radial approach is associated with a significantly reduced incidence of vascular complications and bleedings following coronary angiography and percutaneous coronary interventions as compared to femoral approach. Several vascular closure devices (VCD) designed for femoral hemostasis have been proposed as an alternative strategy in order to reduce access-related bleedings. However, evidence about their efficacy as compared to radial access is lacking.

**METHODS** In order to systematically review studies comparing radial approach with femoral approach and achievement of hemostasis by VCD, we conducted a search on major electronic databases entering the following key words: “radial”, “vascular access”, “femoral”, “coronary”, “closure devices”. Studies reporting outcomes on access-site complications and/or major bleedings were included in the analysis. Data were extracted by two independent reviewers; odds ratio (OR) and 95% confidence interval (CI) were calculated by random-effects model and were used as summary statistics. Review Manager 5.3 software was used for the analysis.

**RESULTS** Four randomized and seven non-randomized studies were included in the meta-analysis. Outcome data about access-site complications were available for 132,729 patients treated by radial approach and 461,892 patients treated by femoral approach + VCD, whereas outcome data about major bleedings were available for 81,892 patients treated by radial approach and 79,884 patients treated by femoral approach + VCD, respectively. Both access-site complications (OR 0.29, 95% CI 0.22-0.39) and major bleedings (OR 0.43, 95% CI 0.36-0.51) were significantly reduced with radial approach as compared to femoral approach + VCD (Figure).