Abstract: **P6518**

**Radial artery dilatation to improve access and lower complication rates during coronary angiography (RADIAL): a randomized controlled trial**

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**Background:** Transradial catheterization has become the preferred access site for coronary angiography. The transradial approach is however not without challenges and complications. Cannulation is technically challenging and may require multiple cannulation attempts or access may fail. Local access site complications may occur postprocedurally.

**Purpose:** To explore the use of prolonged occlusion flow mediated dilatation (PO-FMD) to dilate the radial artery prior to cannulation to reduce puncture attempts, increase cannulation success and reduce access site complications in transradial coronary angiography.

**Methods:** 1156 patients undergoing transradial coronary angiography were randomized into PO-FMD and sham PO-FMD groups. PO-FMD was achieved by a 10 minute inflation of a blood pressure cuff on the arm to above systolic pressure, followed by deflation with resultant radial artery dilation. In the sham PO-FMD group the cuff was not inflated. The operators were blinded to the intervention.

**Results:** 580 patients were randomized to the sham PO-FMD group and 576 to the PO-FMD group. The number of puncture attempts were reduced with the use of PO-FMD, with a median number of attempts of 1 in the PO-FMD group and 2 in the sham PO-FMD group (p<0.001). Cannulation failure was reduced with PO-FMD FMD with cannulation failure rates of 2.7% in the PO-FMD group and 5.8% in the sham PO-FMD group (p=0.01). Radial artery pulsation loss (RAPL) was reduced with PO-FMD with 1.4% in the PO-FMD group and 3.8% in the sham PO-FMD group (p=0.02).

**Conclusion:** PO-FMD decreases puncture attempts, reduces cannulation failure rates and decreases RAPL during transradial coronary angiography.