

## Effect of transradial ECG guided immediate intervention on culprit lesion with a single guiding catheter on door to balloon time

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**Objective:** There is limited literature on procedure of primary PCI in catheterization laboratory. This study was designed to assess the impact of electrocardiogram-guided immediate intervention on culprit lesion with a single guiding catheter in ST-elevation myocardial infarction (STEMI) patients on door-to-balloon (D2B) time and clinical outcomes.

**Methods:** In this prospective, randomized single center study, 560 patients with STEMI who underwent primary PCI from February 2017 to July 2019 were randomized into two groups. In single catheter group, a single guiding catheter (MAC3.5 or JL 3.5 guiding catheter) was used to perform angiogram and PCI of culprit vessel, followed by contralateral angiography (n=280). In control group, 280 patients underwent primary PCI after complete diagnostic angiography. The primary evaluation was D2B time and second endpoint include catheterization laboratory-to-balloon (C2B) time, major adverse cardiac events (MACE) at 30 days. This trial was registered with ClinicalTrials.gov, NCT03272451.

**Results:** Baseline characteristics were not different between the two

groups. The median D2B time (54.83 [IQR 40.00–68.0] min versus 58.32 [IQR 44.12–78.40] min,  $P=0.007$ ), C2B time (16.91 [IQR 13.88–21.42] min versus 23.80 [IQR 18.92–28.52] min,  $P<0.001$ ), total procedural time (45.17 [34.06–59.48] min versus 48.51 [37.04–64.60] min,  $P=0.012$ ) and fluoroscopy time (9.70 [6.50–14.15] min versus 11.26 [8.01–14.27] min,  $P=0.025$ ) were significantly shorter in single catheter group compared with control group. The proportion of patients achieving D2B time within 60 minutes increased significantly in the single catheter group (61.79% vs. 52.14%,  $P=0.021$ ). The rate of radial perforation was significantly reduced in single catheter group (0.71% vs. 3.21%,  $P=0.033$ ). The total number of catheters was significantly less in single catheter group ( $1.18\pm 0.54$  vs.  $2.23\pm 0.60$ ,  $p<0.001$ ). There was no significant difference in the MACE at 30 days (2.5% vs. 4.64%,  $P=0.172$ ) between the 2 groups.

**Conclusion:** ECG-guided immediate intervention on culprit lesion with a single guiding catheter in STEMI patients can reduce D2B time, C2B time, procedural time and fluoroscopy time.