

Transradial Primary Percutaneous Coronary Intervention for Acute ST Elevation Myocardial Infarction

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Background: Primary percutaneous coronary intervention (PPCI) for acute ST elevation myocardial infarction (STEMI) is the current approach to treatment. This procedure is generally performed through the femoral artery (FA), but in recent years the radial approach (RA) has gained popularity, primarily due to the improved safety and convenience for the patients. Radial PPCI can be performed with similar efficacy to the FA, but questions have been raised as to the time needed to achieve reperfusion with the radial compared to the femoral approach.

Methods: Data of PPCIs is prospectively collected in a database in our institution including patient and lesion demographics as well as the time segments of door to needle and needle to balloon. A retrospective analysis of this database was performed to compare FA and RA access approaches where all data was available from the years 2004- 2010.

Results: 445 patients with complete data underwent PPCI with 373 (83%) by the FA and 72 (17%) by RA: the percentage of RA PPCI has increased from 2.1% in 2004 to 37% in 2010. There was no difference in the infarct artery site between RA and FA. Door to balloon time was similar in the two groups: 62 ± 33 min in the FA and 60 ± 33 min in the RA. Needle to balloon time was 18 ± 13 min in the FA and 17 ± 12 min in the RA. There were no significant hematomas in the RA group, and 7 in the FA group. There were no failures or crossover from the RA to the FA group. Patients had a mean hospital stay of 5.5 days in the RA group and 6.5 days in the FA group ($p = 0.06$).

Conclusion: The RA approach to PPCI is at least as efficient and safe as the traditional FA in patients with acute STEMI without evidence of delay to reperfusion and with a lower incidence of hematomas.