



# Transradial intervention as the first choice of treatment for ST elevation myocardial infarction patients: editorial comment

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Recently, transradial intervention (TRI) has been widely used for percutaneous coronary intervention (PCI). Over the past decades, TRI has become very efficacious even during complex procedures, given the remarkable advances in interventional devices. ST elevation myocardial infarction (STEMI) is highly thrombotic, associated with a high bleeding risk if antiplatelet and anticoagulation agents are given; bleeding complications compromise clinical outcomes. Several studies have demonstrated the efficacy and safety of TRI compared to transfemoral intervention (TFI) in STEMI patients [1-4]. These studies include the Radial Versus Femoral Access for Coronary Angiography or Intervention (RIVAL) study, the ST-Segment Elevation Myocardial Infarction Treated by Radial or Femoral Approach in a Multicenter Randomized Clinical (STEMI-RADIAL) trial, and the Radial versus Femoral Randomized Investigation in ST-segment Elevation Acute Coronary Syndrome (RIFLE-STEACS) study. All reported significant reductions in access site-related complications, lower mortality, and fewer net clinical adverse events (NACE) in acute coronary syndrome (ACS) patients in-

cluding STEMI patients, attributable principally to significant reductions in bleeding and all-cause mortality. The Minimizing Adverse Haemorrhagic Events by TRansradial Access Site and Systemic Implementation of AngioX (MATRIX) trial confirmed that TRI improved outcomes compared to TFI, affording consistent benefits across the entire spectrum of ACS patients including STEMI patients [4]. A 2018 meta-analysis of 31 studies reported in the Cochrane database [5] found that TRI reduced 30-day short-term NACE, cardiac death, all-cause mortality, bleeding, and access site complications; but insufficient evidence was available in terms of long-term clinical outcomes.

In the current issue, Li et al. [6] describe the outcomes of TRI, including relatively long-term NACE, in STEMI patients. TRI for STEMI patients undergoing primary PCI featuring drug-eluting stents was associated with lower incidences of access site hematoma, 12-month repeat revascularization, and NACE compared to TFI, as has been found in previous studies. Interestingly, the repeat revascularization rate was significantly lower in the TRI group. The authors consider that this is explained by the complex lesion subset; complex patients might

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not be adequately handled in statistical terms because data were not randomized. Also, image-guided PCI was more frequent in the TRI group. This finding should be confirmed in a large-scale, long-term, prospective randomized study. No significant differences in the revascularization rates associated with either approach were apparent in previous short-term studies.

Additionally, upon subgroup analysis of MATRIX data, the effects of radial versus femoral access were consistent across most subgroups including those defined by age, sex, body mass index, planned or actual prescription of prasugrel or ticagrelor versus clopidogrel, diabetes status, renal function, or a history of peripheral vascular disease. However, TRI afforded significantly better outcomes in high-volume centers (where over 80% of patients underwent TRI) [4], but TRI was associated with more operator and patient radiation exposure [7].

Conclusively, the evidence (including the findings of this study) suggests that TRI should be the first-line approach for patients, including STEMI patients who are hemodynamically stable, especially in high-volume TRI centers, with care taken to provide appropriate radiation shielding.

#### Conflict of interest

No potential conflict of interest relevant to this article was reported.

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