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Letter to the Editor

Transradial versus transfemoral approach in STEMI: Choice is with the operator

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I have read with great interest the article entitled "Radial or Femoral Access in Primary Percutaneous Coronary Intervention (PCI): Does the Choice Matters?" by Batra et al.[1] The authors have compared clinical outcomes in patients of ST-segment elevation myocardial infarction (STEMI) undergoing primary PCI by either Transradial access (TRA) or transfemoral access (TFA). They concluded that TRA had significant reduction in bleeding complications (0.5% vs 1.6%; $p = 0.009$) and in-hospital mortality (0.8% vs 3.5%; $p < 0.001$) as compared to TFA. I would like to add few comments with regards to the TRA versus TFA in STEMI patients. There are mainly five trials which has robust evidence for the preferred approach for PCI in STEMI patients. The RIFLE-STEACS, STEMI-RADIAL and SAFARI-STEMI were dedicated STEMI trials whereas RIVAL and MATRIX trials had STEMI subgroups.

1. The STEMI subgroup of RIVAL study revealed non-significant difference in bleeding events between both the groups (TRA 0.84% vs TFA 0.94%) but significant low 30-day mortality in TRA (1.3% vs 3.2%).[2] Therefore, the mortality difference can't be solely explained by the reduced bleeding complication. The low bleeding complication rate may be because of restricted use of Glycoprotein (GP) IIb/IIIa antagonists in only one quarter of the patients.
2. The STEMI subgroup of MATRIX trial also didn't show a significant difference in bleeding events (TRA 1.0 vs TFA 1.2%) and mortality (TRA 2.4% vs TFA 2.7%).[3] The low bleeding events in this trial may be due to use of bivalirudin in place of unfractionated heparin and use of Glycoprotein (GP) IIb/IIIa antagonists in only 13% of patients.
3. The RIFLE-STEACS trial reported significantly lower bleeding events (TRA 7.8% vs TFA 12.2%) and 30-day mortality (TRA 5.2% vs TFA 9.2%) favouring TRA in STEMI patients.[4] But as the overall bleeding events were high in both the groups, the patients with TFA had more bleeding complications. This may be due to higher use of Glycoprotein (GP) IIb/IIIa antagonists in two third of the patients.
4. The STEMI RADIAL trial also showed significantly reduced bleeding events (TRA 1.4% vs TFA 7.2%).[5] There was net reduction of adverse events like myocardial infarction or stroke but the mortality was not different between the two groups.
5. The recently published SAFARI-STEMI is the largest clinical trial assessing the superiority of TRA over TFA in patients of STEMI undergoing primary PCI.[6] There was no significant difference in 30-day mortality between the two approach (1.3% vs 1.5%). Even there was no significant difference in major bleeding complications between access sites (0.9% vs 1.3%). Glycoprotein (GP) IIb/IIIa antagonists was used in only 6% of patients and in 69% of patients with TFA approach vascular closure device was used.

Therefore, the best results in STEMI patients undergoing primary PCI not only depends on the site of access but also depends on many other factors like operator experience, use of anticoagulation like bivalirudin or usage of Glycoprotein (GP) IIb/IIIa antagonists and the use of vascular closure devices. The operator should be trained in both accesses equally otherwise the risk of Campeau Radial Paradox is always there leading to higher TFA complications.

Declaration of competing interest

The authors have no conflict of interest to declare.

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